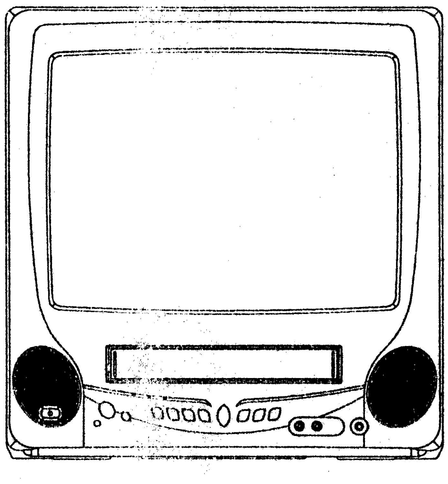
SERVICE MANUAL

ORION

MD20X / COMBI 3602SI

COLOR TELEVISION/VIDEO CASSETTE RECORDER



VHS
PAL SECAM

ORIGINAL
CHASSIS CODE A

Best. Nr. SM20X

Design and specifications are subject to change without notice.

SERVICING NOTICES ON CHECKING

1. KEEP THE NOTICES

As for the places which need special attentions, they are indicated with the labels or seals on the cabinet, chassis and parts. Make sure to keep the indications and notices in the operation manual.

2. AVOID AN ELECTRIC SHOCK

There is a high voltage part inside. Avoid an electric shock while the electric current is flowing.

3. USE THE DESIGNATED PARTS

The parts in this equipment have the specific characters of incombustibility and withstand voltage for safety. Therefore, the part which is replaced should be used the part which has the same character.
Especially as to the important parts for safety which is indicated in the circuit diagram or the table of parts as a ⚠ mark, the designated parts must be used.

4. PUT PARTS AND WIRES IN THE ORIGINAL POSITION AFTER ASSEMBLING OR WIRING

There are parts which use the insulation material such as a tube or tape for safety, or which are assembled in the condition that these do not contact with the printed board.
The inside wiring is designed not to get closer to the pyrogenic parts and high voltage parts. Therefore, put these parts in the original positions.

5. TAKE CARE TO DEAL WITH THE CATHODE-RAY TUBE

In the condition that an explosion-proof cathode-ray tube is set in this equipment, safety is secured against implosion. However, when removing it or serving from backward, it is dangerous to give a shock. Take enough care to deal with it.

6. AVOID AN X-RAY

Safety is secured against an X-ray by considering about the cathode-ray tube and the high voltage peripheral circuit, etc.
Therefore, when repairing the high voltage peripheral circuit, use the designated parts and make sure not modify the circuit.
Repairing except indicates causes rising of high voltage, and it emits an X-ray from the cathode-ray tube.

7. PERFORM A SAFETY CHECK AFTER SERVICING

Confirm that the screws, parts and wiring which were removed in order to service are put in the original positions, or whether there are the portions which are deteriorated around the serviced places serviced or not. Check the insulation between the antenna terminal or external metal and the AC cord plug blades. And be sure the safety of that.

(INSULATION CHECK PROCEDURE)

1. Unplug the plug from the AC outlet.
2. Remove the antenna terminal on TV and turn on the TV.
3. Insulation resistance between the cord plug terminals and the eternal exposure metal **[Note 2]** should be more than 1M ohm by using the 500V insulation resistance meter **[Note 1]**.
4. If the insulation resistance is less than 1M ohm, the inspection repair should be required.

[Note 1]
If you have not the 500V insulation resistance meter, use a Tester.

[Note 2]
External exposure metal: Antenna terminal
Earphone jack

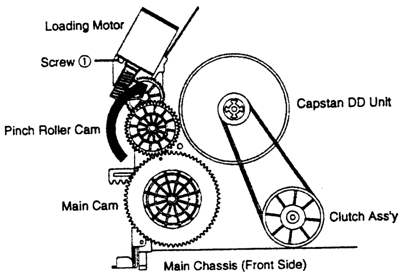
HOW TO ORDER PARTS

Please include the following informations when you order parts. (Particularly the CHASSIS CODE.)

1. MODEL NUMBER and CHASSIS CODE
   You can find in the back of your unit.
2. PART NO. and DESCRIPTION
   You can find it in your SERVICE MANUAL.

TAPE REMOVAL METHOD AT NO POWER SUPPLY

1. Remove the VCR block from the main unit.
   (Refer to item 1 of the DISASSEMBLY INSTRUCTIONS.)
2. Remove the screw ① of the Deck Chassis and remove the Loading Motor.
3. Rotate the Pinch Roller Cam in the direction of the arrow by hand to slacken the Video Tape.
4. Rotate the Clutch Ass'y either of the directions to wind the Video Tape in the Cassette Case.
5. Repeat the above step 3~4. Then take out the Video Cassette from the Deck Chassis. Be careful not to scratch on the tape.



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GENERAL SPECIFICATIONS

G-1	TV System	CRT	CRT Size / Visual Size		14 inch / 335.4mmV
			CRT Type		Normal
			Deflection		90 degree
			Magnetic Field BV/BH		+0.45G/0.18G
		Color System			PAL/SECAM
		Speaker			1Speaker
			Position		Front
			Size		1.5 x 2.5 Inch
			Impedance		8 ohm
		Sound Output	MAX		1.5W
			10%(Typical)		1.0W
G-2	VCR	System			VHS Player / Recorder
		Video System			PAL/SECAM
		Hi-Fi STEREO			No
		NTSC PB(PAL 60Hz)			Yes
		Deck	DECK		OVD-7
			Loading System		Front
			Motor		3
		Heads	Video Head		2 Head
			FM Audio Head		No
			Audio /Control		Mono / Yes
			Erase(Full Track Erase)		Yes
		Tape Speed	Rec	PAL/SECAM	SP
				NTSC	-
			Play	PAL/SECAM	SP
				NTSC	SP
		Fast Forward / Rewind Time (Approx.)	Cassette		FF:1'48"/REW:1'48" at E-180
		Forward/Reverse Picture Search	NTSC or PAL-M		SP=3x,5x
			PAL or SECAM		SP=5x,7x
		Frame Advance			Yes
		Slow Speed			1/5~1/30
G-3	Tuning System	Broadcasting System			CCIR,French System B/G,L
		Tuner and Receive CH	System		1Tuner
			Destination		CCIR Hyper,France CATV
			Tuning System		F-Synth
			Input Impedance		VHF/UHF 75 ohm
			CH Coverage	(SECAM)	F2~F4, FB~FQ, F21~F69
				(PAL)	E2~E4, X~Z+2, S1~S10, E5~E12,S11~S41,E21~E69
		Intermediate Frequency			PAL/SECAM(U&VH)/SECAM(VL)
			Picture(FP)		38.9/38.9/34.4MHz
			Sound(FS)		33.4/32.4/40.9MHz
			FP-FS		5.5/6.5/6.5MHZ
		Auto Tuning Method			All Band (Not CCIR CH Plan)
		Preset CH			80CH
		Stereo/Dual TV Sound			No
		Tuner Sound Muting			Yes
G-4	Signal	Video Signal	Input Level		1 V p-p/75 ohm
			Output Level		1 V p-p/75 ohm
			S/N Ratio (Weighted)		53 dB
			Horizontal Resolution at SP Mode		240 Lines
		Audio Signal	Input Level		-3.8dBm/50Kohm
			Output Level		-3.8dBm/1Kohm
			S/N Ratio at SP		42 dB
			Harmonic Distortion at SP (1KHz)	Typical	1.5 %
			Frequency Response	at SP	100Hz ~10kHz
				at LP	-
				at SLP	-
		Hi-Fi Audio Signal	Dynamic Range : More than		-
			Frequency Response :		-
			Wow And Flutter : Less than		-
			Channel Separation : More than		-
			Harmonic Distortion : Less than		-
G-5	Power	Power Source	AC		230V 50Hz
			DC		-
		Power Consumption		at AC	50 W at 230 V 50 Hz
				at DC	-
			Stand by (at AC)		8 W at 230 V 50 Hz
			Per Year		-
		Protector	Power Fuse		Yes
			Dew Sensor		No
G-6	Regulation		Safety		CE
			Radiation		CE
			X-Radiation		NONE

GENERAL SPECIFICATIONS

G-7	**Temperature**			Operation	+5°C ~ +40°C	
				Storage	-20°C ~ +60°C	
G-8	**Operating Humidity**				Less than 80% RH	
G-9	**On Screen Display**	Menu			Yes	
			Menu	Type	Character	
			ATS			No
			Timer Rec Set		Yes	
			Channel Setup		Yes	
				Auto Tuning	Yes	
				Ch Mapping		No
				Ch Tuning	Yes	
				Ch Allocation	Yes	
			TV Setup		Yes	
				On/Off Timer Set	Yes	
				Picture	Yes	
				Audio		No
			VCR Setup			No
				Auto Repeat On/Off	Yes	
				System Select		No
				Scene Repeat		No
			System Setup		Yes	
				Clock Set	Yes (Calendar 24h)	
				Language	Yes	
				System Select	Yes	
		G-CODE(or SHOWVIEW or PLUSCODE)No. Entry				No
		Stereo/Audio Output				No
				Bilingual		No
				NICAM		No
		Clock			Yes	
		CH/AV			Yes	
		Tape Counter(Linear Counter)			Yes	
		Tape Speed				No
		Sleep Time			Yes	
		Control Level	Volume		Yes	
			Brightness/Contrast/Sharpness/Color		Yes	
			Tint			No
			Bass/Treble/Balance			No
			Manual Tracking		Yes	
		Play/Stop/FF/Rew/Rec/OTR/T-Rec/Pause/Eject/Tape In (Symbol Mark)			Yes	
		Auto Tracking/Manual Tracking			Yes	
		S-Repeat/SR-R/SR-PLAY				No
		Index			Yes	
		Mute			Yes	
		Hi-Fi				No
		Repeat			Yes	
		Zero Return				No
		PAL/SECAM			Yes	
		Dew				No
G-10	**OSD Language**				English,French,Spanish,German,Italian	
G-11	**Clock,Timer and Timer Back-up**	Calendar			1990/1/1 ~ 2081/12/31	
		Timer Events			8 prog/ 1 month	
		One Touch Recording Max Time			SP 5 Hours	
		OTPB Valid Time			-	
		Sleep Timer		Max Time	120	min.
				Step	10	min.
		On/Off Timer		Program(On Tim / Off Tim)	1	prog.
		Auto Shut Off		No Signal	15	min.
				No Operation	-	min.
		Timer Back-up (at Power Off Mode)			30	min.
G-12	**Remote Control**	Unit			RC-CH	
		Glow in Dark Remocon				No
		Power Source		Voltage(D.C)	3V	
				UM size x pcs	UM-4 x 2 pcs	
		Total Keys			35	Keys
		Keys		Power	Yes	
				1	Yes	
				2	Yes	
				3	Yes	
				4	Yes	
				5	Yes	
				6	Yes	
				7	Yes	
				8	Yes	
				9	Yes	
				0/AV	Yes	
				CH/Tr Up	Yes	
				CH/Tr Up/Page Up		No

GENERAL SPECIFICATIONS

			CH/Tr Down	Yes	
			CH/Tr Down /Page Down		No
			Volume Up	Yes	
			Volume Down	Yes	
			Play/Up		No
			Play/Up/Slow	Yes	
			F.Fwd/Right	Yes	
			Rew/Left	Yes	
			Pause/Still	Yes	
			Pause		No
			Stop/Down	Yes	
			Rec/OTR	Yes	
			Eject	Yes	
			Counter Reset	Yes	
			Speed		No
			Timer Rec	Yes	
			TV Monitor	Yes	
			TV Monitor /Rec Monitor		No
			Program	Yes	
			Program /V+		No
			Auto Tracking	Yes	
			Auto Tracking /Reveal		No
			Menu	Yes	
			Enter	Yes	
			Enter/Hold		No
			Cancel/Ch Skip	Yes	
			Cancel/Ch Skip/F-T-B		No
			Index	Yes	
			Index /Sub Page		No
			Call	Yes	
			Text/Mix/TV		No
			Sleep Timer	Yes	
			Mute	Yes	
			Zero Return	Yes	
			CM Skip		No
			OTPB		No
			END Call		No
			Red		No
			Cyan		No
			Green		No
			Yellow		No
			Audio Select		No
G-13	**Features**	Auto Head Cleaning			No
		Auto Tracking		Yes	
		HQ (VHS Standard High Quality)		Yes	
		Auto Power On, Auto Play, Auto Rewind, Auto Eject		Yes	
		Auto Shut Off		Yes	
		Auto Repeat		Yes	
		VIDEO PLUS+(SHOWVIEW,G-CODE)			No
		CH Auto Set-Up/Auto Clock			No
		Forward / Reverse Picture Search		Yes	
		One Touch Playback			No
		Auto Tuning		Yes	
		Anti-Theft			No
		End Call			No
		Index Search		Yes	
		SQPB			No
		CATV		Yes	
		CM Skip(30sec x 6 Times)			No
		Comb Filter			No
		T'Text			No
			Text type		
		Scene Repeat			No
		Hotel Lock			No
		TV Monitor		Yes	
		TV/Rec Monitor			No
		Zero Return		Yes	
		Choke Coil			No
		Power On Memory			No
G-14	**Accessories**	Owner's Manual	Language	French/Dutch	
			w/Guarantee Card	Yes	
		Remote Control Unit		Yes	
		Rod Antenna			No
			Poles	-	
			Terminal	-	
			w/300 ohm to 75 ohm Antenna Adapter	-	
		Loop Antenna			No

GENERAL SPECIFICATIONS

				Terminal	-	
		U/V Mixer				No
		DC Car Cord (Center+)				No
		Guarantee Card				No
		Warning Sheet				No
		Circuit Diagram				No
		Antenna Change Plug				No
		Service Facility List				No
		Important Safeguard				No
		Dew/AHC Caution Sheet				No
		AC Plug Adapter				No
		Quick Set-up Sheet			Yes	
		Battery			Yes	
				UM size x pcs	UM-4 x 2 pcs	
				OEM Brand		No
		AC Cord				No
		AV Cord (2Pin-1Pin)				No
		21pin-RCA Cable				No
		Registration Card				No
		PTB Sheet				No
		Anti-Theft Sheet				No
		Euro Warranty Information Sheet				No
G-15	**Interface**	Switch	Front	Power	Yes	
				Play	Yes	
				Pause/Still		No
				System Select		No
				One Touch Playback		No
				Channel Up	Yes	
				Channel Down	Yes	
				F.FWD/Cue	Yes	
				Eject/Stop	Yes	
				Main Power SW	Yes	
				Volume Up	Yes	
				Volume Down	Yes	
				Rew/Rev	Yes	
				Rec/OTR	Yes	
			Rear	Main Power SW		No
		Indicator		Standby	Red	
				Rec/OTR	Red	
				T-Rec	Red	
				On Timer		No
				CS		No
		Key Light up		Rec/OTR		No
				One Touch Playback		No
				Play		No
		Terminals	Front	Video Input	RCA x1	
				Audio Input	RCA x1	
				Other Terminal	HeadPhone(Stereo & Mono, 3.5mm)	
			Rear	Video Input		No
				Audio Input		No
				Video Output		No
				Audio Output		No
				Euro Scart	1-SCART	
				Diversity		No
				Ext Speaker		No
				DC Jack 12V(Center +)		No
				VHF/UHF Antenna Input	DIN type	
				AC Inlet		No
G-16	**Set Size**			Approx. W x D x H (mm)	362 x 365 x 382	
G-17	**Weight**			Net (Approx.)	11.0 kg	(- lbs)
				Gross (Approx.)	12.5 kg	(- lbs)
G-18	**Carton**		Master Carton			No
				Content	-	
				Material	-	
				Dimensions W x D x H(mm)	-	
				Description of Origin	-	
			Gift Box		Yes	
				Material	Double/White	
				Dimensions W x D x H(mm)	423 x 447 x 443	
				Design	As per Buyer's	
				Description of Origin		No
			Drop Test	Natural Dropping At	1 Corner / 3 Edges / 6 Surfaces	
				Height (cm)	62	
			Container Stuffing(40' container)		700	Sets
G-19	**Material**		Cabinet	Cabinet Front	PS 94HB	
				Cabinet Rear	PS 94V0 DECABROM	

GENERAL SPECIFICATIONS

			Jack Panel	PS 94V0 DECABROM	
		PCB	Non-Halogen Demand		No
			Eyelet Demand		No
G-20	**Environment**	Pb Free	Lead-free Solder		No
			Other		No
		Cd Free			No

1. REMOVAL OF MECHANICAL PARTS AND P.C. BOARDS

1-1: BACK CABINET (Refer to Fig. 1-1)

1. Remove the 5 screws (1).
2. Remove the AC cord from the AC cord hook (2).
3. Remove the Back Cabinet in the direction of arrow.

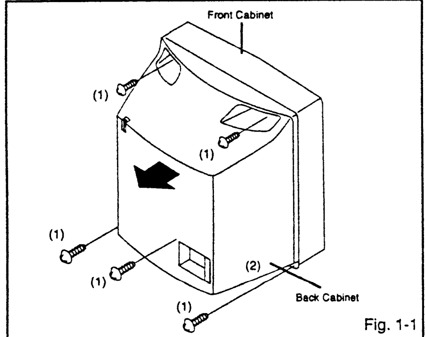

Front Cabinet
(1)
(1)
(1)
(1)
(2)
Back Cabinet
(1)

Fig. 1-1

1-2: CRT PCB (Refer to Fig. 1-2)

CAUTION: BEFORE REMOVING THE ANODE CAP, DISCHARGE ELECTRICITY BECAUSE IT CONTAINS HIGH VOLTAGE. BEFORE ATTEMPTING TO REMOVE OR REPAIR ANY PCB, UNPLUG THE POWER CORD FROM THE AC SOURCE.

1. Remove the Anode Cap.
   (Refer to REMOVAL OF ANODE CAP)
2. Remove the CRT PCB in the direction of arrow.

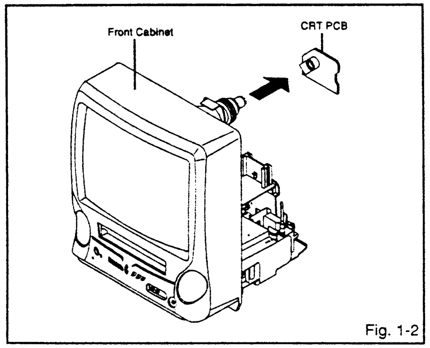

Front Cabinet
CRT PCB

Fig. 1-2

1-3: TV/VCR BLOCK (Refer to Fig. 1-3)

1. Remove the 2 screws (1).
2. Disconnect the following connectors:
   (CP302, CP402, CP501 and CP502).
3. Unlock the support (2).
4. Remove the TV/VCR Block in the direction of arrow.

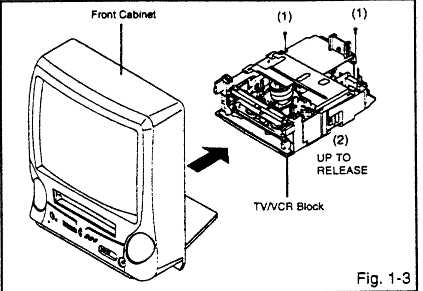

Front Cabinet
(1)
(1)
(2)
UP TO RELEASE
TV/VCR Block

Fig. 1-3

1-4: POWER PCB (Refer to Fig. 1-4)

1. Remove the 3 screws (1).
2. Disconnect the following connectors:
   (CP401A and CP851A).
3. Remove the Power PCB in the direction of arrow.

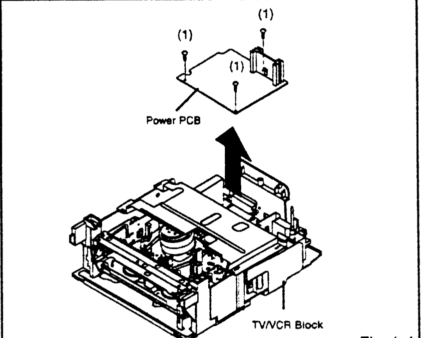

(1)
(1)
(1)
Power PCB
TV/VCR Block

Fig. 1-4

1-5: DECK SHIELD PLATE (Refer to Fig. 1-5)

1. Remove the 3 screws (1).
2. Remove the Deck Shield Plate in the direction of arrow (A).
3. Remove the screw (2).
4. Remove the Bottom Shield Plate in the direction of arrow (B).

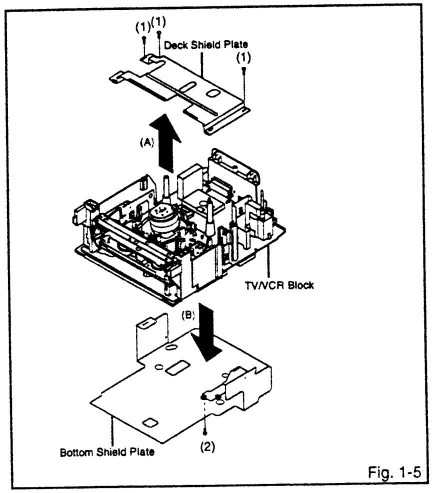

(1)(1)
Deck Shield Plate
(1)
(A)
TV/VCR Block
(B)
Bottom Shield Plate
(2)

Fig. 1-5

1-6: DECK CHASSIS (Refer to Fig. 1-6)

NOTE

Do not remove the cable at the FE Head section. The FE Head may be damaged if you remove the cable by force.

1. Remove the screw (1).
2. Remove the FE Head.
3. Remove the 2 screws (2).
4. Disconnect the following connectors:
   (CP1001, CP4001, CP4004 and CP4005).
5. Remove the Deck Chassis in the direction of arrow.

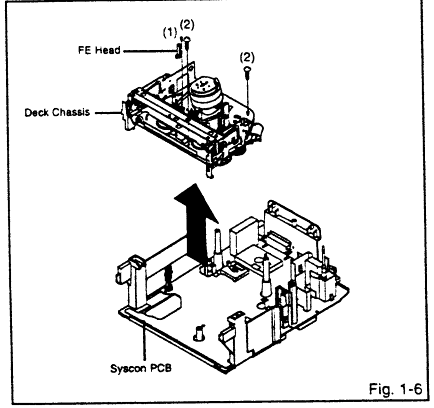

(1)(2)
FE Head
(2)
Deck Chassis
Syscon PCB

Fig. 1-6

1-7: JACK PLATE AND SYSCON PCB (Refer to Fig. 1-7)

1. Remove the screw (1).
2. Remove the 2 screws (2).
3. Remove the Syscon PCB in the direction of arrow.

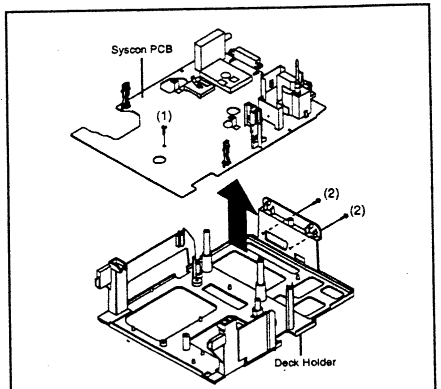

Syscon PCB
(1)
(2)
(2)
Deck Holder

Fig. 1-7

2. REMOVAL OF VCR DECK PARTS

2-1: TOP BRACKET (Refer to Fig. 2-1)

1. Extend the 2 supports ①.
2. Slide the 2 supports ② and remove the Top Bracket.

NOTE

1. After the installation of the Top Bracket, bend the support ① so that the Top Bracket is fixed.

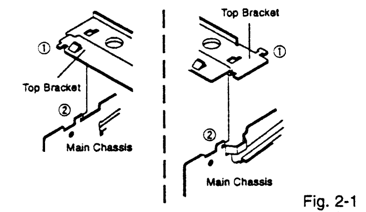

①
Top Bracket
②
Main Chassis
Top Bracket
①
②
Main Chassis

Fig. 2-1

2-2: CASSETTE HOLDER ASS'Y (Refer to Fig. 2-2)

1. Move the Cassette Holder Ass'y to the front side.
2. Push the Locker R to remove the Cassette Side R.
3. Remove the Cassette Side L.

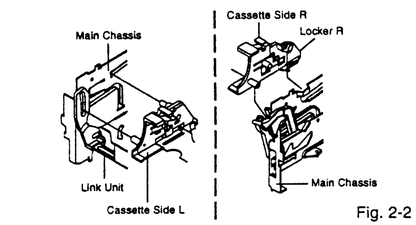

Main Chassis
Cassette Side R
Locker R
Link Unit
Cassette Side L
Main Chassis

Fig. 2-2

2-3: CASSETTE SIDE L/R (Refer to Fig. 2-3-A)

1. Remove the Locker Spring.
2. Unlock the 4 supports ① and then remove the Cassette Side L/R.
3. Unlock the support ② and then remove the Locker R.

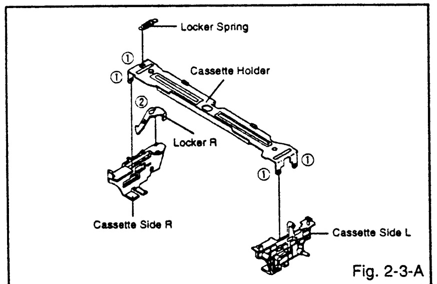

Locker Spring
①
①
Cassette Holder
②
Locker R
①
①
Cassette Side R
Cassette Side L

Fig. 2-3-A

NOTE

1. In case of the Locker R installation, check if the one position of Fig. 2-3-B is correctly locked.
2. When you install the Cassette Side R, be sure to move the Locker R after installing.

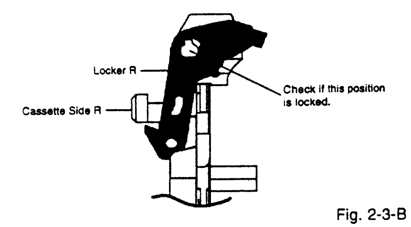

Locker R
Cassette Side R
Check if this position is locked.

Fig. 2-3-B

2-4: LINK UNIT (Refer to Fig. 2-4)

1. Set the Link Unit to the Eject position.
2. Unlock the support ①.
3. Remove the (A) side of the Link Unit first, then remove the (B) side.

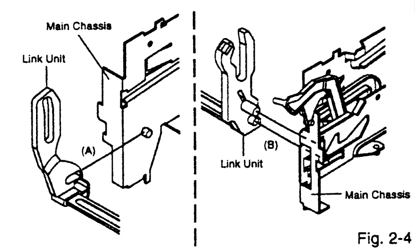

Main Chassis
Link Unit
(A)
(B)
Link Unit
Main Chassis

Fig. 2-4

2-5: LINK LEVER/FLAP LEVER/BOT COVER (Refer to Fig. 2-5)

1. Unlock the support ①.
2. Remove the BOT Cover.
3. Extend the support ②.
4. Remove the Link Lever.
5. Remove the Flap Lever.

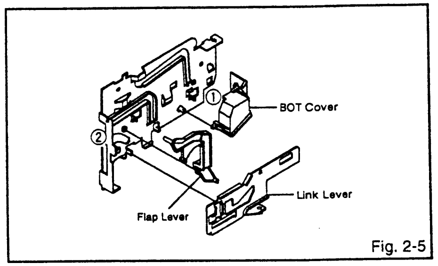

①
BOT Cover
②
Flap Lever
Link Lever

Fig. 2-5

2-6: LOADING MOTOR/WORM (Refer to Fig. 2-6-A)

1. Remove the screw ①.
2. Remove the Loading Motor.
3. Remove the Worm.

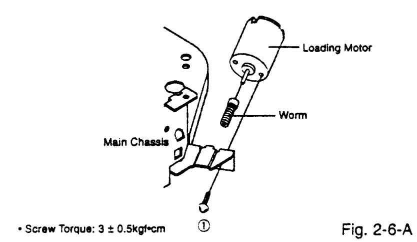

Loading Motor
Worm
Main Chassis
• Screw Torque: 3 ± 0.5kgf•cm
①

Fig. 2-6-A

NOTE

1. In case of the Worm installation, check if the value of the Fig. 2-6-B is correct.
2. In case of the Loading Motor installation, hook the wire on the Cassette Opener as shown Fig. 2-6-C.
3. When installing the wires between Capstan DD Unit and Loading Motor, connect them correctly as shown Fig. 2-6-D.

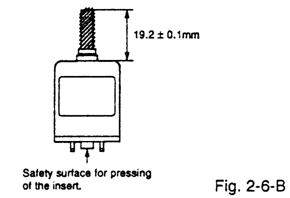

19.2 ± 0.1mm
Safety surface for pressing of the insert.

Fig. 2-6-B

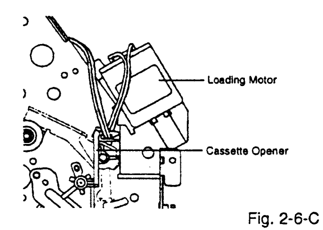

Loading Motor
Cassette Opener

Fig. 2-6-C

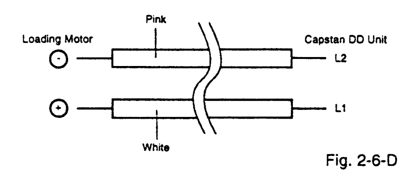

Pink
Loading Motor
Capstan DD Unit
⊖
L2
⊕
L1
White

Fig. 2-6-D

2-7: TENSION ASS'Y (Refer to Fig. 2-7-B)

1. Turn the Pinch Roller Cam clockwise so that the Tension Holder hook is set to the position of Fig. 2-7-A to move the Tension Arm Ass'y.
2. Remove the Tension Spring.
3. Unlock the 2 supports ① and remove the Tension Band.
4. Unlock the support ② and remove the Tension Arm Ass'y.
5. Unlock the support ③ and remove the Tension Connect.
6. Float the hook ④ and turn it clockwise then remove the Tension Holder.

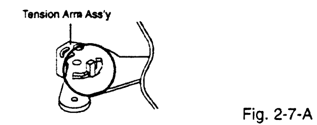

Tension Arm Ass'y

Fig. 2-7-A

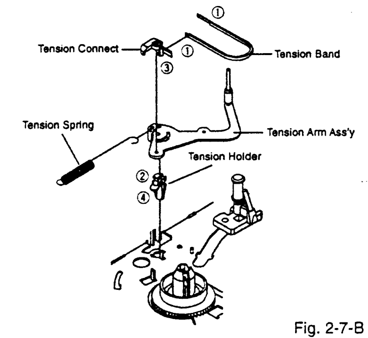

①
Tension Connect
①
Tension Band
③
Tension Spring
Tension Arm Ass'y
Tension Holder
②
④

Fig. 2-7-B

NOTE

1. In case of the Tension Band installation, note the direction of the installation. **(Refer to Fig. 2-7-C)**
2. In case of the Tension Band installation, install correctly as Fig. 2-7-D.
3. In case of the Tension Connect installation, install as the circled section of Fig. 2-7-E.

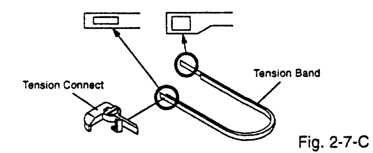

Tension Connect
Tension Band

Fig. 2-7-C

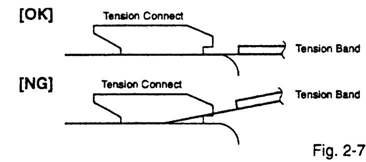

[OK]
Tension Connect
Tension Band
[NG]
Tension Connect
Tension Band

Fig. 2-7-D

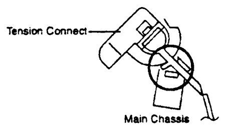

Tension Connect
Main Chassis

Fig. 2-7-E

2-8: T BRAKE ARM/T BRAKE BAND (Refer to Fig. 2-8-A)

1. Remove the T Brake Spring.
2. Turn the T Brake Arm clockwise and bend the hook section to remove it.
3. Unlock the 2 supports ① and remove the T Brake Band.

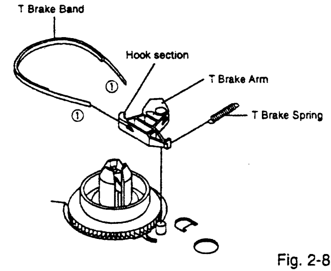

T Brake Band
Hook section
T Brake Arm
①
①
T Brake Spring

Fig. 2-8-A

NOTE

1. In case of the T Brake Band installation, install correctly as Fig. 2-8-B.

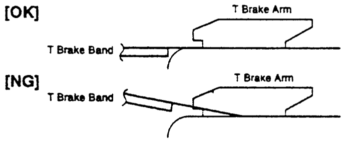

[OK]
T Brake Arm
T Brake Band
[NG]
T Brake Arm
T Brake Band

Fig. 2-8-B

2-9: S REEL/T REEL/IDLER ARM ASS'Y/IDLER GEAR (Refer to Fig. 2-9-A)

1. Remove the S Reel and T Reel.
2. Remove the 2 Polyslider Washers ①.
3. Remove the Idler Arm Ass'y and Idler Gear.

NOTE

1. Take care not to damage the gears of the S Reel and T Reel.
2. The Polyslider Washer may be remained on the back of the reel.
3. Take care not to damage the shaft.
4. Do not touch the section "A" of S Reel and T Reel. (Use gloves.) **(Refer to Fig. 2-9-A)** Do not adhere the stains on it.
5. When you install the reel, clean the shaft and grease it (FG-84M). (If you do not grease, noise may be heard in FF/REW mode.)
6. After installing the reel, adjust the height of the reel. **(Refer to MECHANICAL ADJUSTMENT)**

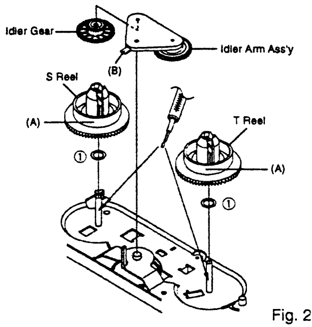

Idler Gear
Idler Arm Ass'y
S Reel
(B)
(A)
T Reel
①
(A)
①

Fig. 2-9-A

NOTE

1. In case of the S Reel and T Reel installation, check if the correct parts are installed. **(Refer to Fig. 2-9-B)**
2. In case of the Idler Arm Ass'y installation, install correctly as Fig. 2-9-C. And also set it so that the section "B" of Fig. 2-9-A is placed under the Main Chassis tab.

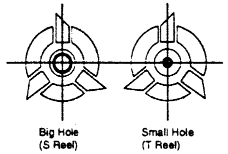

Big Hole
(S Reel)
Small Hole
(T Reel)

Fig. 2-9-B

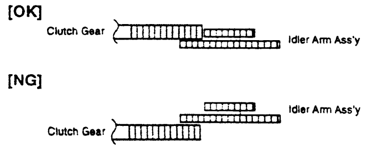

[OK]
Clutch Gear
Idler Arm Ass'y
[NG]
Idler Arm Ass'y
Clutch Gear

Fig. 2-9-C

2-10: CASSETTE OPENER/PINCH ROLLER BLOCK/P5 ARM ASS'Y (Refer to Fig. 2-10-A)

1. Unlock the support ① and remove the Cassette Opener.
2. Remove the Pinch Roller Block and P5 Arm Ass'y.

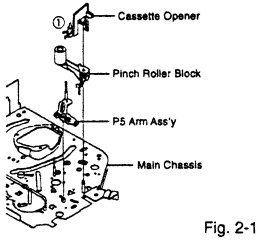

①
Cassette Opener
Pinch Roller Block
P5 Arm Ass'y
Main Chassis

Fig. 2-10-A

NOTE

1. Do not touch the Pinch Roller. (Use gloves.)
2. In case of the Pinch Roller Block and the Pinch Roller Cam installation, install correctly as Fig. 2-10-B.

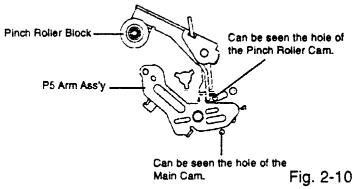

Pinch Roller Block
Can be seen the hole of the Pinch Roller Cam.
P5 Arm Ass'y
Can be seen the hole of the Main Cam.

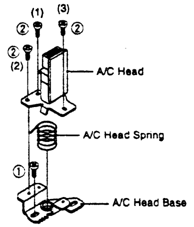
Fig. 2-10-B

2-11: A/C HEAD (Refer to Fig. 2-11-A)

1. Remove the screw ①.
2. Remove the A/C Head Base.
3. Remove the 3 screws ②.
4. Remove the A/C Head and A/C Head Spring.

NOTE

1. Do not touch the A/C Head. (Use gloves.)
2. When you install the A/C Head Spring, install as shown in Fig. 2-11-B.
3. When you install the A/C Head, tighten the screw (1) first, then tighten the screw (2), finally tighten the screw (3).


(1)
(3)
②
②
②
(2)
A/C Head
A/C Head Spring
①
A/C Head Base

• Screw Torque: 5 ± 0.5kgf•cm

Fig. 2-11-A

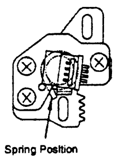
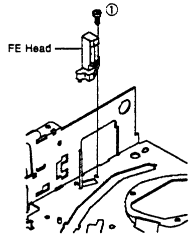

Spring Position

Fig. 2-11-B

2-12: FE HEAD (RECORDER ONLY) (Refer to Fig. 2-12)

1. Remove the screw ①.
2. Remove the FE Head.



• Screw Torque: 5 ± 0.5kgf•cm
• The FE Head is not installed on the Video Cassette Player.

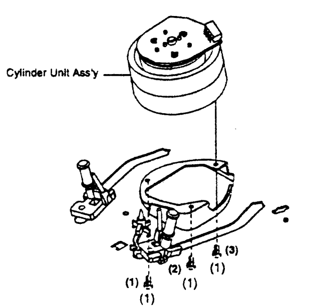
Fig. 2-12

2-13: CYLINDER UNIT ASS'Y (Refer to Fig. 2-13)

1. Disconnect the following connector. (CD2001)
2. Remove the 3 screws (1).
3. Remove the Cylinder Unit Ass'y.

NOTE

1. When you install the Cylinder Unit Ass'y, tighten the screws from **(1)** to **(3)** in order while pulling the Ass'y toward the left front direction.

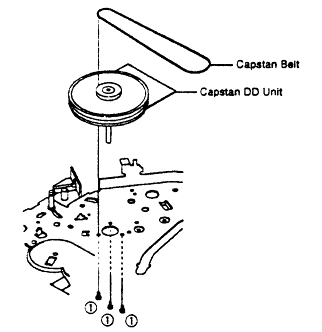

Cylinder Unit Ass'y
(3)
(2)
(1)
(1)
(1)
(1)

• Screw Torque: 3 ± 0.5kgf•cm

Fig. 2-13

2-14: CAPSTAN DD UNIT (Refer to Fig. 2-14-A)

1. *Remove the Capstan Belt.*
2. Remove the 3 screws ①.
3. Remove the Capstan DD Unit.

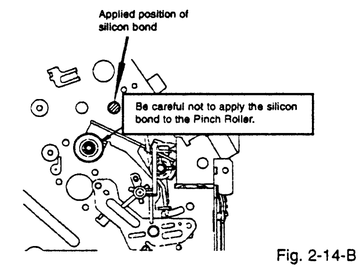

Capstan Belt
Capstan DD Unit
①
①
①

• Screw Torque: 4 ± 0.5kgf•cm

Fig. 2-14-A

NOTE

1. In case of the Capstan DD Unit installation, apply the silicon bond (TSE3843-W) on the position Fig. 2-14-B correctly. (If no silicon bond applied, abnormal noise will be heard on the deck operation.) **(Refer to Fig. 2-14-B, C)**


Applied position of silicon bond

Be careful not to apply the silicon bond to the Pinch Roller.

Fig. 2-14-B

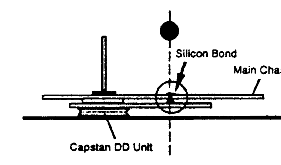

Silicon Bond
Main Chassis
Capstan DD Unit

Fig. 2-14-C

2-15: MAIN CAM/PINCH ROLLER CAM/JOINT GEAR (Refer to Fig. 2-15-A)

1. Remove the E-Ring ①, then remove the Main Cam.
2. Remove the E-Ring ②, then remove the Pinch Roller Cam and Joint Gear.

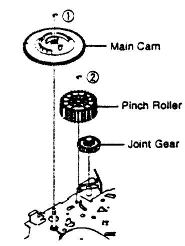

①
Main Cam
②
Pinch Roller Cam
Joint Gear

Fig. 2-15-A

NOTE

1. In case of the Pinch Roller Cam and Main Cam installation, install them as the circled section of Fig. 2-15-B so that the each markers are met. **(Refer to Fig. 2-15-B)** And also can be seen the Main Chassis hole through the Main Cam maker hole.

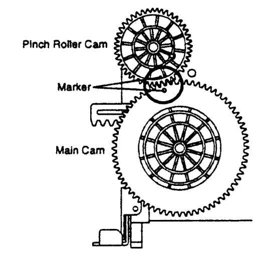

Pinch Roller Cam
Marker
Main Cam

Fig. 2-15-B

2-16: LOADING GEAR S/T UNIT (Refer to Fig. 2-16-A)

1. Remove the E-Ring ① and remove the Main Loading Gear.
2. Remove the Main Rod, Tension Lever, Loading Arm S Unit and Loading Arm T Unit.

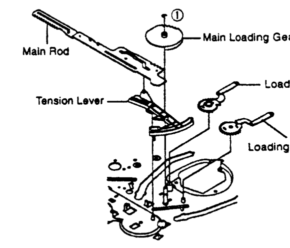

①
Main Loading Gear
Main Rod
Loading Arm T Unit
Tension Lever
Loading Arm S Unit

Fig. 2-16-A

NOTE

1. When you install the Loading Arm S Unit, Loading Arm T Unit and Main Loading Gear, align each marker. **(Refer to Fig. 2-16-B)**

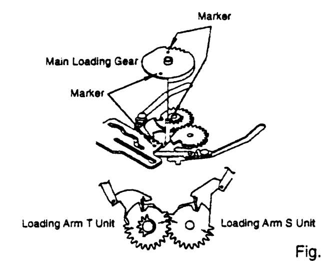

Marker
Main Loading Gear
Marker
Loading Arm T Unit
Loading Arm S Unit

Fig. 2-16-B

2-17: CLUTCH ASS'Y/RING SPRING/CLUTCH LEVER/ CLUTCH GEAR (Refer to Fig. 2-17-A)

1. Remove the Polyslider Washer ①.
2. Remove the Clutch Ass'y and Ring Spring.
3. Remove the Clutch Lever.
4. Remove the Coupling Gear, Coupling Spring and Clutch Gear.

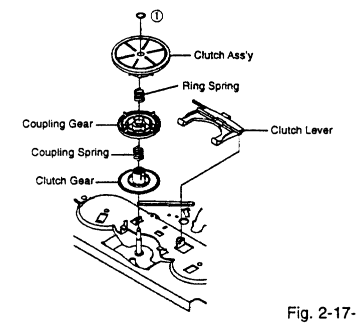

①
Clutch Ass'y
Ring Spring
Coupling Gear
Clutch Lever
Coupling Spring
Clutch Gear

Fig. 2-17-A

NOTE

1. In case of the Clutch Ass'y installation, install it with inserting the spring of the Clutch Ass'y into the dent of the Coupling Gear. **(Refer to Fig. 2-17-B)**

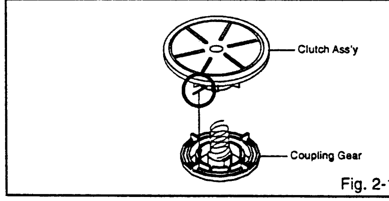
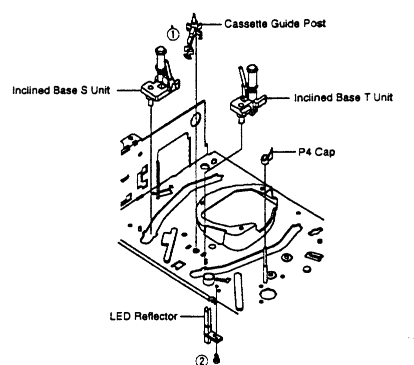

Clutch Ass'y
Coupling Gear

Fig. 2-17-B

2-18: CASSETTE GUIDE POST/INCLINED BASE S/T UNIT/P4 CAP/LED REFLECTOR (Refer to Fig. 2-18-A)

1. Remove the P4 Cap.
2. Unlock the support ① and remove the Cassette Guide Post.
3. Remove the Inclined Base S/T Unit.
4. Remove the screw ②.
5. Remove the LED Reflector.


①
Cassette Guide Post
Inclined Base S Unit
Inclined Base T Unit
P4 Cap
LED Reflector
②

• Screw Torque: 5 ± 0.5kgf•cm

Fig. 2-18-A

NOTE

1. Do not touch the roller of Guide Roller.
2. In case of the P4 Cap installation, install it with parallel for "A" and "B" of Fig. 2-18-B.
3. In case of the Cassette Guide Post installation, install correctly as the circled section of Fig. 2-18-C.

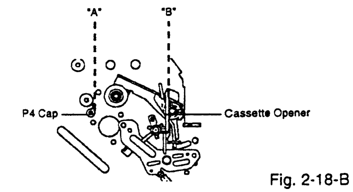

"A"
"B"
P4 Cap
Cassette Opener

Fig. 2-18-B

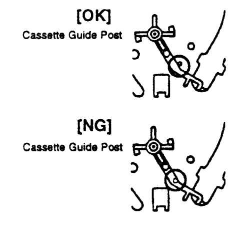

[OK]
Cassette Guide Post
[NG]
Cassette Guide Post

Fig. 2-18-C

DISASSEMBLY INSTRUCTIONS

3. REMOVAL OF ANODE CAP

Read the following **NOTED** items before starting work.

- After turning the power off there might still be a potential voltage that is very dangerous. When removing the Anode Cap, make sure to discharge the Anode Cap's potential voltage.
- Do not use pliers to loosen or tighten the Anode Cap terminal, this may cause the spring to be damaged.

REMOVAL

1. Follow the steps as follows to discharge the Anode Cap. **(Refer to Fig. 3-1.)**
   Connect one end of an Alligator Clip to the metal part of a flat-blade screwdriver and the other end to ground.
   While holding the plastic part of the insulated Screwdriver, touch the support of the Anode with the tip of the Screwdriver.
   A cracking noise will be heard as the voltage is discharged.

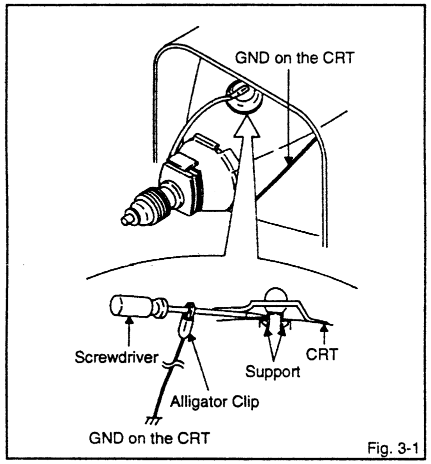

GND on the CRT
Screwdriver
Support
CRT
Alligator Clip
GND on the CRT

Fig. 3-1

2. Flip up the sides of the Rubber Cap in the direction of the arrow and remove one side of the support. **(Refer to Fig. 3-2.)**

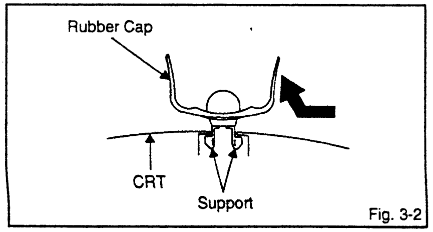

Rubber Cap
CRT
Support

Fig. 3-2

3. After one side is removed, pull in the opposite direction to remove the other.

NOTE

Take care not to damage the Rubber Cap.

INSTALLATION

1. Clean the spot where the cap was located with a small amount of alcohol. **(Refer to Fig. 3-3.)**

NOTE

Confirm that there is no dirt, dust, etc. at the spot where the cap was located.

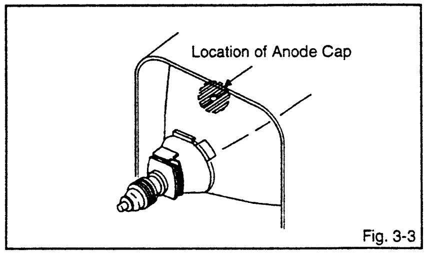

Location of Anode Cap

Fig. 3-3

2. Arrange the wire of the Anode Cap and make sure the wire is not twisted.
3. Turn over the Rubber Cap. **(Refer to Fig. 3-4.)**

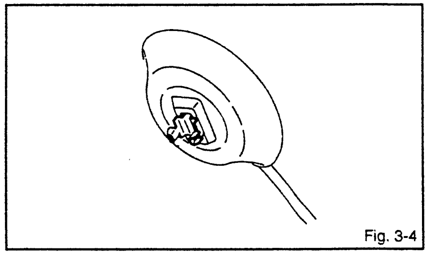


Fig. 3-4

4. Insert one end of the Anode Support into the anode button, then the other as shown in **Fig. 3-5.**

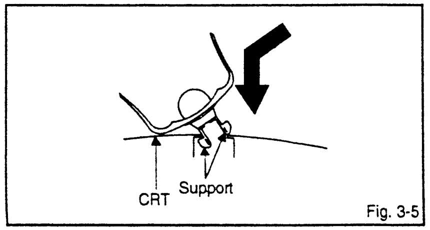

CRT
Support

Fig. 3-5

5. Confirm that the Support is securely connected.
6. Put on the Rubber Cap without moving any parts.

DISASSEMBLY INSTRUCTIONS

4. REMOVAL AND INSTALLATION OF FLAT PACKAGE IC

REMOVAL

1. Put the Masking Tape (cotton tape) around the Flat Package IC to protect other parts from any damage. **(Refer to Fig. 4-1.)**

NOTE

Masking is carried out on all the parts located within 10 mm distance from IC leads.

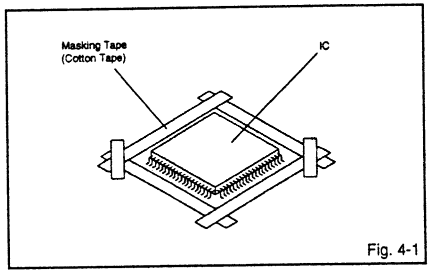

Masking Tape (Cotton Tape)
IC

Fig. 4-1

2. Heat the IC leads using a blower type IC desoldering machine. **(Refer to Fig. 4-2.)**

NOTE

Do not add the rotating and the back and forth directions force on the IC, until IC can move back and forth easily after desoldering the IC leads completely.

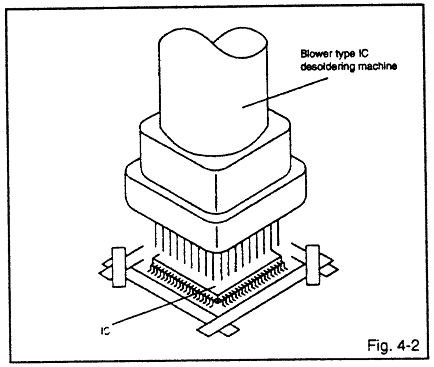

Blower type IC desoldering machine
IC

Fig. 4-2

3. When IC starts moving back and forth easily after desoldering completely, pickup the corner of the IC using a tweezers and remove the IC by moving with the IC desoldering machine. **(Refer to Fig. 4-3.)**

NOTE

Some ICs on the PCB are affixed with glue, so be careful not to break or damage the foil of each IC leads or solder lands under the IC when removing it.

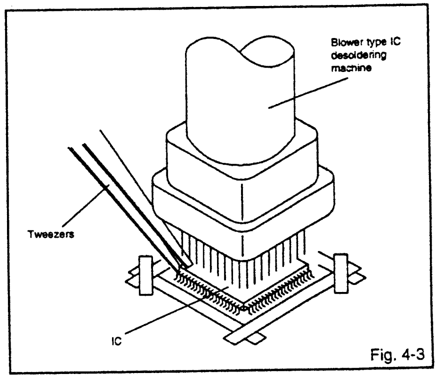

Blower type IC desoldering machine
Tweezers
IC

Fig. 4-3

4. Peel off the Masking Tape.
5. Absorb the solder left on the pattern using the Braided Shield Wire. **(Refer to Fig. 4-4.)**

NOTE

Do not move the Braided Shield Wire in the vertical direction towards the IC pattern.

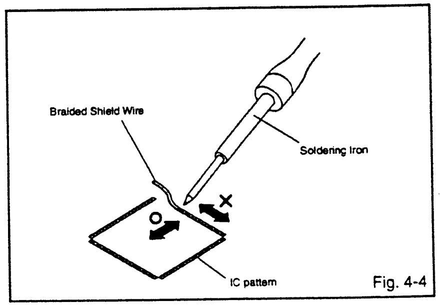

Braided Shield Wire
Soldering Iron
O
X
IC pattern

Fig. 4-4

DISASSEMBLY INSTRUCTIONS

INSTALLATION

1. Take care of the polarity of new IC and then install the new IC fitting on the printed circuit pattern. Then solder each lead on the diagonal positions of IC temporarily. **(Refer to Fig. 4-5.)**

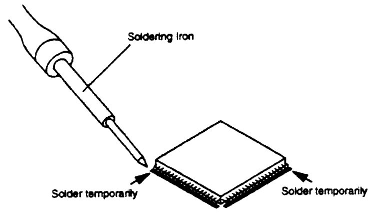


Fig. 4-5

2. Supply the solder from the upper position of IC leads sliding to the lower position of the IC leads. **(Refer to Fig. 4-6.)**

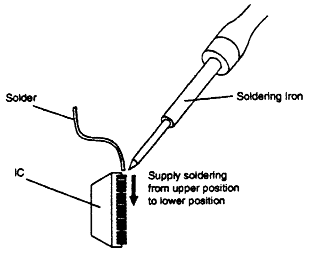


Fig. 4-6

3. Absorb the solder left on the lead using the Braided Shield Wire. **(Refer to Fig. 4-7.)**

NOTE

Do not absorb the solder to excess.

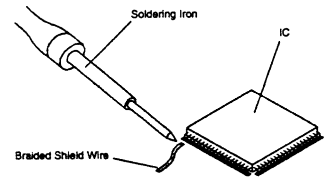


Fig. 4-7

4. When bridge-soldering between terminals and/or the soldering amount are not enough, resolder using a Thin-tip Soldering Iron. **(Refer to Fig. 4-8.)**

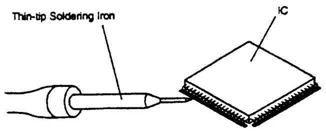


Fig. 4-8

5. Finally, confirm the soldering status on four sides of the IC using a magnifying glass. Confirm that no abnormality is found on the soldering position and installation position of the parts around the IC. If some abnormality is found, correct by resoldering.

NOTE

When the IC leads are bent during soldering and/or repairing, do not repair the bending of leads. If the bending of leads are repaired, the pattern may be damaged. So, be always sure to replace the IC in this case.

KEY TO ABBREVIATIONS

A	**A/C**	Audio/Control
	ACC	Automatic Color Control
	AE	Audio Erase
	AFC	Automatic Frequency Control
	AFT	Automatic Fine Tuning
	AFT DET	Automatic Fine Tuning Detect
	AGC	Automatic Gain Control
	AMP	Amplifier
	ANT	Antenna
	A.PB	Audio Playback
	APC	Automatic Phase Control
	ASS'Y	Assembly
	AT	All Time
	AUTO	Automatic
	A/V	Audio/Video
B	**BGP**	Burst Gate Pulse
	BOT	Beginning of Tape
	BPF	Bandpass Filter
	BRAKE SOL	Brake Solenoid
	BUFF	Buffer
	B/W	Black and White
C	**C**	Capacitance, Collector
	CASE	Cassette
	CAP	Capstan
	CARR	Carrier
	CH	Channel
	CLK	Clock
	CLOCK (SY-SE)	Clock (Syscon to Servo)
	COMB	Combination, Comb Filter
	CONV	Converter
	CPM	Capstan Motor
	CTL	Control
	CYL	Cylinder
	CYL-M	Cylinder-Motor
	CYL SENS	Cylinder-Sensor
D	**DATA (SY-CE)**	Data (Syscon to Servo)
	dB	Decibel
	DC	Direct Current
	DD Unit	Direct Drive Motor Unit
	DEMOD	Demodulator
	DET	Detector
	DEV	Deviation
E	**E**	Emitter
	EF	Emitter Follower
	EMPH	Emphasis
	ENC	Encoder
	ENV	Envelope
	EOT	End of Tape
	EQ	Equalizer
	EXT	External
F	**F**	Fuse
	FBC	Feed Back Clamp
	FE	Full Erase
	FF	Fast Forward, Flipflop
	FG	Frequency Generator
	FL SW	Front Loading Switch
	FM	Frequency Modulation
	FSC	Frequency Sub Carrier
	FWD	Forward
G	**GEN**	Generator
	GND	Ground
H	**H.P.F**	High Pass Filter
	H.SW	Head Switch
	Hz	Hertz
I	**IC**	Integrated Circuit
	IF	Intermediate Frequency
	IND	Indicator
	INV	Inverter
K	**KIL**	Killer
L	**L**	Left
	LED	Light Emitting Diode
	LIMIT AMP	Limiter Amplifier
	LM, LDM	Loading Motor
	LP	Long Play
	L.P.F	Low Pass Filter
	LUMI.	Luminance
M	**M**	Motor
	MAX	Maximum
	MINI	Minimum
	MIX	Mixer, mixing
	MM	Monostable Multivibrator
	MOD	Modulator, Modulation
	MPX	Multiplexer, Multiplex
	MS SW	Mecha State Switch
N	**NC**	Non Connection
	NR	Noise Reduction
O	**OSC**	Oscillator
	OPE	Operation
P	**PB**	Playback
	PB CTL	Playback Control
	PB-C	Playback-Chrominance
	PB-Y	Playback-Luminance
	PCB	Printed Circuit Board
	P. CON	Power Control
	PD	Phase Detector
	PG	Pulse Generator
	P-P	Peak-to Peak
R	**R**	Right
	REC	Recording
	REC-C	Recording-Chrominance
	REC-Y	Recording-Luminance
	REEL BRK	Reel Brake
	REEL S	Reel Sensor
	REF	Reference
	REG	Regulated, Regulator
	REW	Rewind
	REV, RVS	Reverse
	RF	Radio Frequency
	RMC	Remote Control
	RY	Relay
S	**S. CLK**	Serial Clock
	S. COM	Sensor Common
	S. DATA	Serial Data
	SEG	Segment
	SEL	Select, Selector
	SENS	Sensor
	SER	Search Mode
	SI	Serial Input
	SIF	Sound Intermediate Frequency
	SO	Serial Output
	SOL	Solenoid
	SP	Standard Play
	STB	Serial Strobe
	SW	Switch

KEY TO ABBREVIATIONS

S SYNC : Synchronization
SYNC SEP : Sync Separator, Separation
T TR : Transistor
TRAC : Tracking
TRICK PB : Trick Playback
TP : Test Point
U UNREG : Unregulated
V V : Volt
VCO : Voltage Controlled Oscillator
VIF : Video Intermediate Frequency
VP : Vertical Pulse, Voltage Display
V.PB : Video Playback
VR : Variable Resistor
V.REC : Video Recording
VSF : Visual Search Fast Forward
VSR : Visual Search Rewind
VSS : Voltage Super Source
V-SYNC : Vertical-Synchronization
VT : Voltage Tuning
X X'TAL : Crystal
Y Y/C : Luminance/Chrominance

SERVICE MODE LIST

This unit provided with the following SERVICE MODES so you can repair, examine and adjust easily.

To enter SERVICE MODE, unplug AC cord till lost actual clock time. Then press and hold Vol (-) button of main unit and remocon key for more than 2 seconds..

The both pressing of set key and remote control key will not be possible if clock has been set. To reset clock, either unplug AC cord and allow at least 30 minutes before Power On or alternatively, discharge backup capacitor.

Set Key	Remocon Key	Operations
VOL. (-) MIN	1	Initialization of the factory. NOTE: Do not use this for the normal servicing. If you set a factory initialization, the memories are reset such as the clock setting, the channel setting, the POWER ON total hours, and PLAY/REC total hours.
VOL. (-) MIN	2	Horizontal position adjustment of OSD. NOTE: Also can be adjusted by using the Adjustment MENU. Refer to the "ELECTRICAL ADJUSTMENT" (OSD HORIZONTAL).
VOL. (-) MIN	3	Adjust the PG SHIFTER automatically. Refer to the "ELECTRICAL ADJUSTMENT" (PG SHIFTER).
VOL. (-) MIN	4	Adjust the PG SHIFTER manually. Refer to the "ELECTRICAL ADJUSTMENT" (PG SHIFTER).
VOL. (-) MIN	5	Adjusting of the Tracking to the center position. NOTE: Also can be adjusted by pressing the ATR button for more than 2 seconds during PLAY.
VOL. (-) MIN	6	POWER ON total hours and PLAY/REC total hours are displayed on the screen. Refer to the "PREVENTIVE CHECKS AND SERVICE INTERVALS" (CONFIRMATION OF HOURS USED). Can be checked of the INITIAL DATA of MEMORY IC. Refer to the "WHEN REPLACING EEPROM (MEMORY) IC".
VOL. (-) MIN	7	Releasing of PROTECTION PASSWORD.
VOL. (-) MIN	8	Writing of EEPROM initial data. NOTE: Do not use this for the normal servicing.
VOL. (-) MIN	9	Display of the Adjustment MENU on the screen. Refer to the "ELECTRICAL ADJUSTMENT" (On-Screen Display Adjustment).

Method	Operations
Press the ATR button on the remote control for more than 2 seconds during PLAY.	Adjusting of the Tracking to the center position. Refer to the "MECHANICAL ADJUSTMENT" (GUIDE ROLLER) and "ELECTRICAL ADJUSTMENT" (PG SHIFTER).
Make the short circuit between the test point of SERVICE and the GND.	The BOT, EOT, and the Reel Sensor do not work and the deck can be operated without a cassette tape. Refer to the "PREPARATION FOR SERVICING"

PREVENTIVE CHECKS AND SERVICE INTERVALS

The following standard table depends on environmental conditions and usage.
Parts replacing time does not mean the life span for individual parts.
Also, long term storage or misuse may cause transformation and aging of rubber parts.
The following list means standard hours, so the checking hours depends on the conditions.

Time / Parts Name	500 hours	1,000 hours	1,500 hours	2,000 hours	2,500 hours	Notes
Audio Control Head	■	■	■	●	●	Clean those parts in contact with the tape.
Full Erase Head (Recorder only)	■	■	■	●	●	
Capstan Belt		●	●	●	●	Clean the rubber, and parts which the rubber touches.
Pinch Roller	■	●	●	●	●	
Capstan DD Unit		●	●	●	●	
Loading Motor					●	
Tension Band		●	●	●	●	
TBrake Band		●	●	●	●	
Clutch Ass'y		●	●	●	●	
Idler Arm Ass'y		●	●	●	●	
Capstan Shaft	■	■	■	■	■	
Tape Running Guide Post	■	■	■	■	■	Replace when rolling becomes abnormal.
Cylinder Unit	■	●	●	●	●	Clean the Head

■ : Clean
● : Check it and if necessary, replace it.

CONFIRMATION OF HOURS USED

POWER ON total hours and PLAY/REC total hours can be checked on the screen.
Total hours are displayed in 16 system of notation.

NOTE: **If you set a factory initialization, the total hours is reset to "0".**
The confirmation of using hours will not be possible if clock has been set. To reset clock, either unplug AC cord and allow at least 30 minutes before Power On or alternatively, discharge backup capacitor.

1. Set the VOLUME to minimum.
2. Press both VOL. DOWN button on the set and the Channel button **(6)** on the remote control for more than 2 seconds.
3. After the confirmation of using hours, turn off the power.

```
INIT  0B4  06 ─── Initial setting content of MEMORY IC.

POWER ON  0000 ─── POWER ON total hours.
PLAY/REC  0000 ─── PLAY/REC total hours.
```

(16 x 16 x 16 x thousands digit value) + (16 x 16 x hundreds digit value) + (16 x tens digit value) + (ones digit value)

PREVENTIVE CHECKS AND SERVICE INTERVALS

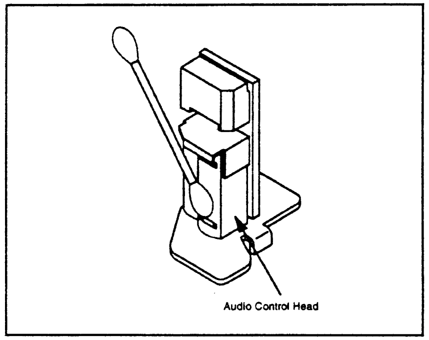
CLEANING

NOTE

After cleaning the heads with isopropyl alcohol, do not run a tape until the heads dry completely. If the heads are not completely dry and alcohol gets on the tape, damage may occur.

1. AUDIO CONTROL HEAD

Clean the Audio Control Head with the cotton stick soaked by alcohol. Clean the full erase head in the same manner. **(Refer to the figure below.)**



2. TAPE RUNNING SYSTEM

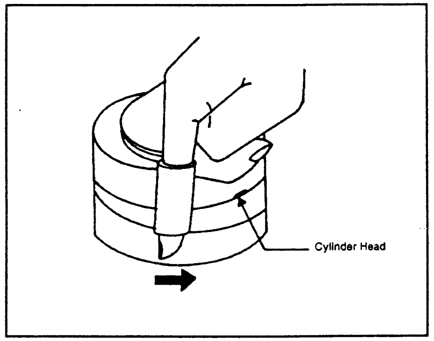
When cleaning the tape transport system, use the gauze moistened with isopropyl alcohol.

3. CYLINDER

Wrap a piece of chamois around your finger. Dip it in isopropyl alcohol. Hold it to the cylinder head softly. Turn the cylinder head counterclockwise to clean it (in the direction of the arrow). **(Refer to the figure below.)**

NOTE

Do not exert force against the cylinder head. Do not move the chamois upward or downward on the head.
Use the chamois one by one.



WHEN REPLACING EEPROM (MEMORY) IC

If a service repair is undertaken where it has been required to change the MEMORY IC, the following steps should be taken to ensure correct data settings while making reference to TABLE 1.

NOTE: Initial Data setting will not be possible if clock has been set. To reset clock, either unplug AC cord and allow at least 30 minutes before Power On or alternatively, discharge backup capacitor.

INI	+0	+1	+2	+3	+4	+5	+6	+7	+8	+9	+A	+B	+C	+D	+E	+F
0B0	---	---	---	---	06	66	B0	B0	C0	81	00	ED	C1	00	41	02
0C0	00	07	7C	A2	D8	05	63	65	66	47	25	3B	2A	17	1D	1B
0D0	3A	0F	4B	20	44	63	64	65	64	CA	00	3A	67	A0	68	5F
0E0	00	A0	30	FB	5F	05	F0	2A	F3	FF	91	B2	9A	92	8C	28
0F0	A0	C4	20	08	BF	10	00	00	00	00	00	00	00	00	00	00
100	27	04	06	15	0F	68	3F	43	CB	30	F9	0F	42	00	B2	00
110	20	03	00	07	40	00	00	00	00	80	03	00	07	00	00	00

Table 1

1. Enter DATA SET mode by setting VOLUME to minimum.
2. While holding down VOLUME button on front cabinet, press key 6 on remote control for more than 2 seconds. ADDRESS and DATA should appear as FIG 1.

ADDRESS DATA

INIT 0B4 06

POWER ON 0000
PLAY/REC 0000

Fig.1

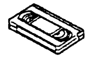
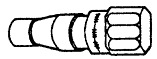
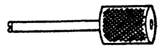
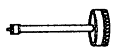
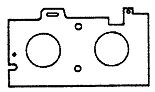
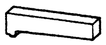
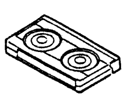
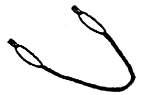
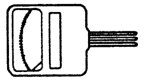
3. ADDRESS is now selected and should "blink". Using the PLAY or STOP button on the remote, step through the ADDRESS until required ADDRESS to be changed is reached.
4. Press ENTER to select DATA. When DATA is selected, it will "blink".
5. Again, step through the DATA using PLAY or STOP button until required DATA value has been selected.
6. Pressing ENTER will take you back to ADDRESS for further selection if necessary.
7. Repeat steps 3 to 6 until all data has been checked.
8. When satisfied correct DATA has been entered, turn POWER off (return to STANDBY MODE) to finish DATA input.

After the data input, set to the initializing of shipping.

9. Turn POWER on.
10. While holding down VOLUME button on front cabinet, press key 1 on remote control for more than 2 seconds.
11. After the finishing of the initializing of shipping, the unit will turn off automatically.

The unit will now have the correct DATA for the new MEMORY IC.

SERVICING FIXTURES AND TOOLS

(For 2 head 1 speed model, 4 head model) VHS Alignment Tape JG001E (VP$_1$S-LI6^3) JG001F (VP$_1$S-CO1^3) JG001R (VP$_1$S-LI6^{3}H) JG001U (VP$_1$S-X6^3) 	**(For 2 head 2 speed model)** VHS Alignment Tape JG001C (VP$_2$S-LI6^3) JG001D (VP$_2$S-CO1^3) JG001V (VP$_2$S-X6^3) 	JG002B Adapter JG002E Dial Torque Gauge (10~90gf•cm) JG002F (60~600gf•cm) 	JG005 Post Adjustment Screwdriver Part No. SV-TG0-030-000 (small) 
JG153 X Value Adjustment Screwdriver 	JG022 Master Plane 	JG024A Reel Disk Height Adjustment Jig 	JG100A Torque Tape (VHT-063) 
JG154 Cable 	Tentelometer 		

Ref. No.	Part No.	Parts Name	Remarks
JG001E	APJG001E00	VHS Alignment Tape	Monoscope, 6KHz **(For 2 head 1 speed model, 4 head model)**
JG001F	APJG001F00	VHS Alignment Tape	Color Bar, 1KHz **(For 2 head 1 speed model, 4 head model)**
JG001R	APJG001R00	VHS Alignment Tape	Hi-Fi Audio **(For Hi-Fi model)**
JG001U	APJG001U00	VHS Alignment Tape	X Value Adjustment **(For 2 head 1 speed model, 4 head model)**
JG001C	APJG001C00	VHS Alignment Tape	Monoscope, 6KHz **(For 2 head 2 speed model)**
JG001D	APJG001D00	VHS Alignment Tape	Color Bar, 1KHz **(For 2 head 2 speed model)**
JG001V	APJG001V00	VHS Alignment Tape	X Value Adjustment **(For 2 head 2 speed model)**
JG002B	APJG002B00	Adapter	VSR Torque, Brake Torque (S Reel/T Reel Ass'y)
JG002E	APJG002E00	Dial Torque Gauge (10~90gf•cm)	Brake Torque (T Reel Ass'y)
JG002F	APJG002F00	Dial Torque Gauge (60~600gf•cm)	VSR Torque, Brake Torque (S Reel)
JG005	APJG005000	Post Adjustment Screwdriver	Guide Roller Adjustment
JG153	APJG153000	X Value Adjustment Screwdriver	X Value Adjustment
JG022	APJG022000	Master Plane	Reel Disk Height Adjustment
JG024A	APJG024A00	Reel Disk Height Adjustment Jig	Reel Disk Height Adjustment
JG100A	APJG100A00	Torque Tape (VHT-063)	Playback Torque, Back Tension Torque During Playback
JG154	APJG154000	Cable	Used to connect the test point of SERVICE and GROUND

PREPARATION FOR SERVICING

How to use the Servicing Fixture

1. Remove the Syscon PCB from the set.
   Be sure to place the parts on a paper so that they have no short-circuit each other.
2. Short circuit between **TP1001** and **Ground** with the cable JG154.
   (The BOT, EOT and the Reel Sensor do not work and the deck can be operated without a cassette tape.)
3. In case of using a cassette tape, press the STOP/EJECT button to insert or eject a cassette tape.
   Turn on the power and re-check the cable before checking the trouble points.

1. CONFIRMATION AND ADJUSTMENT

Read the following NOTES before starting work.

- Place an object which weighs between 450g~500g on the Cassette Tape to keep it steady when you want to make the tape run without the Cassette Holder. (Do not place an object which weighs over 500g.)

1-1: CONFIRMATION AND ADJUSTMENT OF REEL DISK HEIGHT

1. Turn on the power and set to the STOP mode.
2. Set the master plane **(JG022)** and reel disk height adjustment jig **(JG024A)** on the mechanism framework, taking care not to scratch the drum, as shown in **Fig. 1-1-A.**
3. While turning the reel and confirm the following points. Check if the surface "A" of reel disk is lower than the surface "B" of reel disk height adjustment jig **(JG024A)** and is higher than the surface "C". If it is not passed, place the height adjustment washers and adjust to 10(+2, -0)mm.
4. Adjust the other reel in the same way.

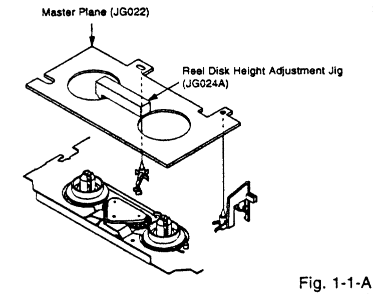

Master Plane (JG022)
Reel Disk Height Adjustment Jig (JG024A)

Fig. 1-1-A

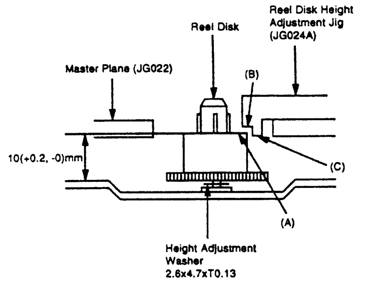

Reel Disk
Reel Disk Height Adjustment Jig (JG024A)
Master Plane (JG022)
(B)
10(+0.2, -0)mm
(C)
(A)
Height Adjustment Washer
2.6x4.7xT0.13
2.6X4.7xT0.25

Fig. 1-1-B

1-2: CONFIRMATION AND ADJUSTMENT OF TENSION POST POSITION

1. Set to the PLAY mode.
2. Adjust the adjusting section for the Tension Arm position so that the Tension Arm top is within the standard line of Main Chassis.
3. While turning the S Reel clockwise, confirm that the edge of the Tension Arm is located in the position described above.

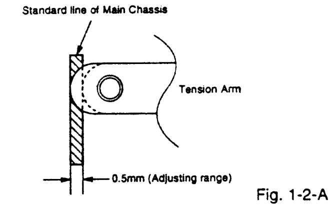

Standard line of Main Chassis
Tension Arm
0.5mm (Adjusting range)

Fig. 1-2-A

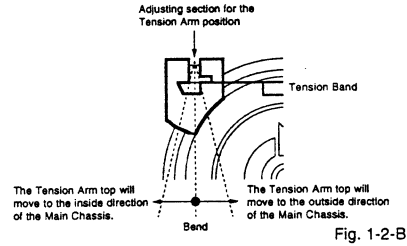

Adjusting section for the Tension Arm position
Tension Band
The Tension Arm top will move to the inside direction of the Main Chassis.
Bend
The Tension Arm top will move to the outside direction of the Main Chassis.

Fig. 1-2-B

1-3: CONFIRMATION OF PLAYBACK TORQUE AND BACK TENSION TORQUE DURING PLAYBACK

1. Load a video tape (E-180) recorded in standard speed mode. Set the unit to the PLAY mode.
2. Install the tentelometer as shown in **Fig. 1-3.** Confirm that the meter indicates 20 ± 2gf in the beginning of playback.

- USING A CASSETTE TYPE TORQUE TAPE **(JG100A)**

1. After confirmation and adjustment of Tension Post position **(Refer to item 1-2)**, load the cassette type torque tape **(JG100A)** and set to the PLAY mode.
2. Confirm that the right meter of the torque tape indicates 50~90gf•cm during playback in SP mode.
3. Confirm that the left meter of the torque tape indicates 25~40gf•cm during playback in SP mode.

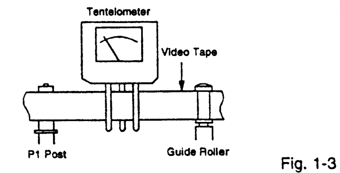

Tentelometer
Video Tape
P1 Post
Guide Roller

Fig. 1-3

1-4: CONFIRMATION OF VSR TORQUE

1. Install the Torque Gauge **(JG002F)** and Adapter **(JG002B)** on the S Reel. Set to the Picture Search (Rewind) mode. **(Refer to Fig.1-4-B)**
2. Then, confirm that it indicates 120~180gf•cm.

NOTE

Install the Torque Gauge on the reel disk firmly. Press the REW button to turn the reel disk.

1-5: CONFIRMATION OF REEL BRAKE TORQUE

(S Reel Brake) **(Refer to Fig. 1-4-B)**

1. Once set to the Fast Forward mode then set to the Stop mode. While, unplug the AC cord when the Pinch Roller Block is on the position of **Fig. 1-4-A.**
2. Move the Idler Ass'y from the S Reel.
3. Install the Torque Gauge **(JG002F)** and Adapter **(JG002B)** on the S Reel. Turn the Torque Gauge **(JG002F)** clockwise.
4. Then, confirm that it indicates 60~100gf•cm.

(T Reel Brake) **(Refer to Fig. 1-4-B)**

1. Once set to the Fast Forward mode then set to the Stop mode. While, unplug the AC cord when the Pinch Roller Block is on the position of **Fig. 1-4-A.**
2. Move the Idler Ass'y from the T Reel.
3. Install the Torque Gauge **(JG002E)** and Adapter **(JG002B)** on the T reel. Turn the Torque Gauge **(JG002E)** counterclockwise.
4. Then, confirm that it indicates 30~50gf•cm.

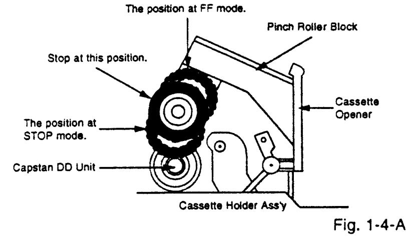

The position at FF mode.
Pinch Roller Block
Stop at this position.
Cassette Opener
The position at STOP mode.
Capstan DD Unit
Cassette Holder Ass'y

Fig. 1-4-A

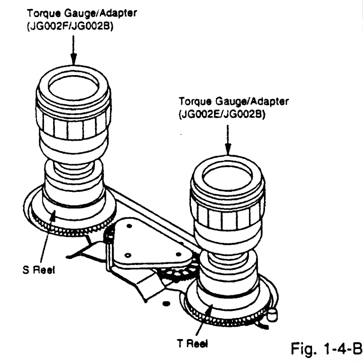

Torque Gauge/Adapter (JG002F/JG002B)
Torque Gauge/Adapter (JG002E/JG002B)
S Reel
T Reel

Fig. 1-4-B

NOTE

If the torque is out of the range, replace the following parts.

Check item	Replacement Part
1-4	Idler Ass'y/Clutch Ass'y
1-5	S Reel side: S Reel/Tension Band/Tension Connect/Tension Arm Ass'y T Reel side: T Reel/T Brake Band//T Brake Spring/T Brake Arm

2. CONFIRMATION AND ADJUSTMENT OF TAPE RUNNING MECHANISM

Tape Running Mechanism is adjusted precisely at the factory. Adjustment is not necessary as usual. When you replace the parts of the tape running mechanism because of long term usage or failure, the confirmation and adjustment are necessary.

2-1: GUIDE ROLLER

1. Playback the VHS Alignment Tape **(JG001C or JG001E). (Refer to SERVICING FIXTURE AND TOOLS)**
2. Connect CH-1 of the oscilloscope to **TP4002 (Envelope)** and CH-2 to **TP4001 (SW Pulse).**
3. Press and hold the Tracking-Auto button on the remote control more than 2 seconds to set tracking to center.
4. Trigger with SW Pulse and observe the envelope. **(Refer to Fig. 2-1-A)**
5. When observing the envelope, adjust the Adjusting Driver **(JG005)** slightly until the envelope will be flat. Even if you press the Tracking Button, adjust so that flatness is not moved so much.
6. Adjust so that the A : B ratio is better than 3 : 2 as shown in **Fig. 2-1-B**, even if you press the Tracking Button to move the envelope (The envelope waveform will begin to decrease when you press the Tracking Button).
7. Adjust the PG shifter during playback. **(Refer to the ELECTRICAL ADJUSTMENTS)**

NOTE

After adjustment, confirm and adjust A/C head. **(Refer to item 2-2)**

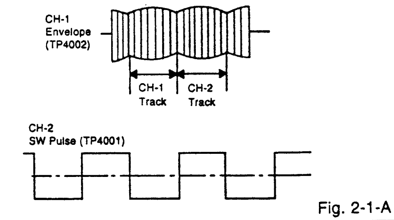

CH-1
Envelope
(TP4002)
CH-1 Track
CH-2 Track
CH-2
SW Pulse (TP4001)

Fig. 2-1-A

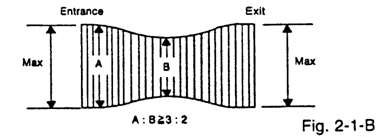

Entrance
Exit
Max
A
B
Max
A : B≧3 : 2

Fig. 2-1-B

2-2: CONFIRMATION AND ADJUSTMENT OF AUDIO/ CONTROL HEAD

When the Tape Running Mechanism does not work well, adjust the following items.

1. Playback the VHS Alignment Tape **(JG001C or JG001E).** **(Refer to SERVICING FIXTURE AND TOOLS)**
2. Confirm that the reflected picture of stamp mark is appeared on the tape prior to P4 Post as shown in **Fig. 2-2-A.**
   a) When the reflected picture is distorted, turn the screw (1) clockwise until the distortion is disappeared.
   b) When the reflected picture is not distorted, turn the screw (1) counterclockwise until little distortion is appeared, then adjust the a).
3. Turn the screw (2) to set the audio level to maximum.
4. Confirm that the bottom of the Audio/ Control Head and the bottom of the tape is shown in **Fig. 2-2-C.**
   c) When the height is not correct, turn the screw (3) to adjust the height. Then, adjust the 1~3 again.

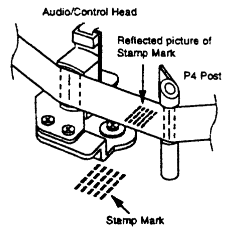


Fig. 2-2-A

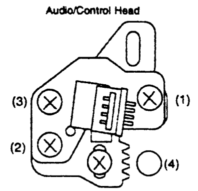


Fig. 2-2-B

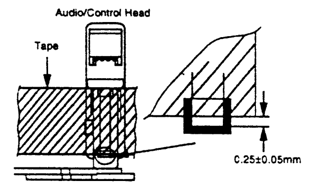


Fig. 2-2-C

2-3: TAPE RUNNING ADJUSTMENT (X VALUE ADJUSTMENT)

1. Confirm and adjust the height of the Reel Disk. **(Refer to item 1-1)**
2. Confirm and adjust the position of the Tension Post. **(Refer to item 1-2)**
3. Adjust the Guide Roller. **(Refer to item 2-1)**
4. Confirm and adjust the Audio/Control Head. **(Refer to item 2-2)**
5. Connect CH-1 of the oscilloscope to **TP4001**, CH-2 to **TP4002** and CH-3 to **HOT side of Audio Out Jack.**
6. Playback the VHS Alignment Tape **(JG001U or JG001V).** **(Refer to SERVICING FIXTURE AND TOOLS)**
7. Press and hold the Tracking-Auto button on the remote control more than 2 seconds to set tracking to center.
8. Set the X Value adjustment driver **(JG153)** to the (4) of **Fig. 2-2-B.** Adjust X value so that the envelope waveform output becomes maximum. Check if the relation between Audio and Envelope waveform becomes (1) or (2) of **Fig. 2-3.**

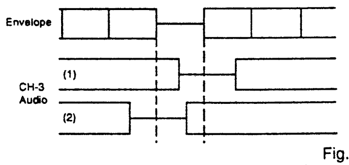
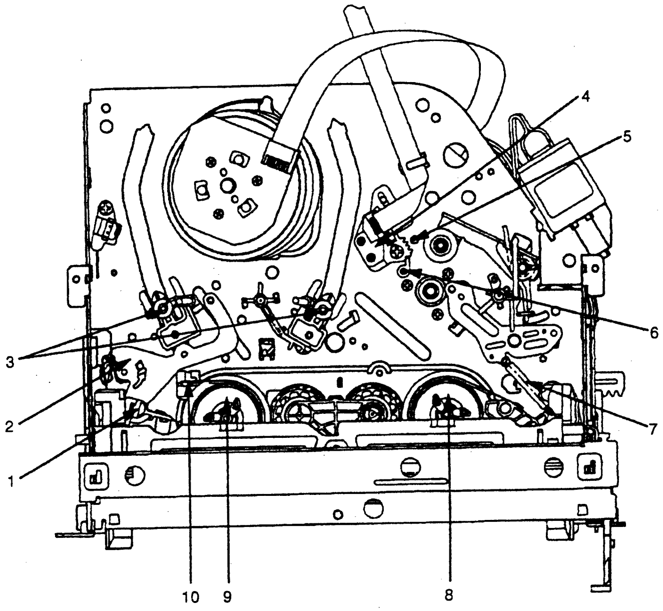


Fig. 2-3

2-4: CONFIRM HI-FI AUDIO (Hi-Fi model only)

1. Connect CH-1 of the oscilloscope to **TP4001** and CH-2 to the **Hi-Fi Audio Out Jack.**
2. Playback the VHS Alignment Tape **(JG001R). (Refer to SERVICING FIXTURE AND TOOLS)**
3. Press and hold the Tracking-Auto button on the remote control more than 2 seconds to set tracking to center.
4. Press the Tracking Up button and count number of steps which the audio output is changed from Hi-Fi (10KHz) to MONO (6KHz).
5. Press and hold the Tracking-Auto button on the remote control more than 2 seconds to set tracking to center.
6. Press the Tracking Down button and count number of steps which the audio output is changed from Hi-Fi (10KHz) to MONO (6KHz).
7. If the difference are more than 3 steps, set the X Value adjustment driver **(JG153)** to (4) of **Fig. 2-2-B.** Change the X Value and adjust it so that the value becomes within 2 steps.

3. MECHANISM ADJUSTMENT PARTS LOCATION GUIDE



1. Tension Connect
2. Tension Arm
3. Guide Roller
4. Audio/Control Head
5. X value adjustment driver hole
6. P4 Post
7. T Brake Spring
8. T Reel
9. S Reel
10. Adjusting section for the Tension Arm position

1. BEFORE MAKING ELECTRICAL ADJUSTMENTS

Read and perform these adjustments when repairing the circuit or replacing parts or PCB assemblies.

CAUTION

- Use an isolation transformer when performing any service on this chassis.
- Before removing the anode cap, discharge electricity because it contains high voltage.
- When removing a PCB or related component, after unfastening or changing a wire, be sure to put the wire back in this original position.
- When you exchange IC and Transistor for a heat sink, apply the silicon grease **(YG6260M)** on the contract section of the heat sink, Before applying new silicon grease, remove all the old silicon grease. (Old grease may cause damages to the IC and Transistor.)

Prepare the following measurement tools for electrical adjustments.

1. Oscilloscope
2. Digital Voltmeter
3. Pattern Generator

On-Screen Display Adjustment

1. Unplug the AC plug for more than 30 minutes to set the clock to the non-setting state. Then, set the volume level to monimum.
2. Press the VOL. DOWN button on the set and the Channel button **(9)** on the remote control for more than 2 seconds to appear the adjustment mode on the screen as show in **FIG. 1-1**.

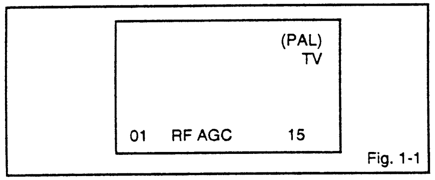


Fig. 1-1

3. Use the Channel UP/DOWN button or Channel button **(0-9)** on the remote control to select the options shown in **Fig. 1-2**.
4. Press the MENU button on the remote control to end the adjustments.

NO.	FUNCTION	NO.	FUNCTION
00	CUT OFF	20	CONTRAST CENT
01	RF AGC	21	CONTRAST MAX
02	AGC GAIN	22	CONTRAST MIN
03	R DRIVE	23	COLOR CENT
04	R CUTOFF	24	COLOR MAX
05	G DRIVE	25	COLOR MIN
06	G CUTOFF	26	TINT
07	B DRIVE	27	SHARP
08	H POSI	28	M R CUT OFF
09	V POSI	29	M G CUT OFF
10	—	30	M B CUT OFF
11	V SIZE	31	H POS OSD
12	—	32	—
13	VCO COARSE	33	—
14	VCO FINE	34	—
15	VCO COARSE L1	35	CVBS OUT
16	VCO FINE L1	36	APR THRESHOLD
17	BRIGHT CENT	37	BELL FILTER
18	BRIGHT MAX	38	BANDPASS
19	BRIGHT MIN	39	REC AGC

Fig. 1-2

2. BASIC ADJUSTMENTS

(VCR SECTION)

2-1: PG SHIFTER

1. Connect CH-1 on the oscilloscope to **TP4001** and CH-2 to **TP4201**.
2. Playback the alignment tape. **(JG001E)**
3. Press and hold the Tracking-Auto button on the remote control more than 2 seconds to set tracking to center.
4. Press the VOL. DOWN button on the set and the channel button **(3)** on the remote control simultaneously until the indicator REC disappears. If the indicator REC disappears, adjustment is completed.

(If the above adjustments doesn't work well:)

5. Press the VOL. DOWN button on the set and the channel button **(3)** on the remote control simultaneously until the indicator REC disappears.
6. When the REC indicator is blinking, press both VOL. DOWN button on the set and the channel button **(4)** on the remote control simultaneously and adjust the Tracking +/- button until the arising to the down of Head Switching Pulse becomes 6.5 ± 0.5H. **(Refer to Fig. 2-1-A, B)**
7. Stop the alignment tape.

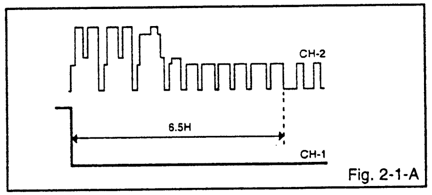


Fig. 2-1-A

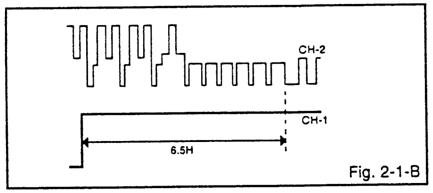


Fig. 2-1-B

2-2: VCO

(MONITOR TUNER)

1. Place the set with Aging Test for more than 10 minutes.
2. Connect the oscillator (38.9MHz) to **TP601**.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(13)** on the remote control to select "VCO COARSE".
4. Press the VOL. UP/DOWN button on the remote control until the "OK" appear on the screen. If the "OK" is not displayed, select the "-" side on the changed from "+" to "-".
5. Press the CH UP button once to set to "VCO FINE" mode.
6. Press the VOL. UP/DOWN button on the remote control to select the 3 step down point from the upper limit on the "OK".
   (Example: In case of the "OK" point 30~41, select 39.)
7. Connect the oscillator (33.95MHz) to **TP601**.
8. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(15)** on the remote control to select "VCO COARSE L1".
9. Press the VOL. UP/DOWN button on the remote control until the "OK" appear on the screen. If the "OK" is not displayed, select the "-" side on the changed from "+" to "-".
10. Press the CH UP button once to set to "VCO FINE L1" mode.
11. Press the VOL. UP/DOWN button on the remote control to select the 5 step down point from the upper limit on the "OK".
    (Example: In case of the "OK" point 30~41, select 37.)

2-3: RF AGC

(REC TUNER)

1. Place the set with Aging Test for more than 15 minutes.
2. Receive the VHF HIGH (63±1dB).
3. Connect the digital voltmeter between the **pin 5 of CP603** and the **pin 1 (GND) of CP603**.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(01)** on the remote control to select "RF AGC".
5. Press the VOL. UP/DOWN button on the remote control until the digital voltmeter is 2.6 ± 0.1V.

2-4: 21 PIN AUDIO OUT

1. Receive the PAL VHF HIGH.
2. Connect the AC voltmeter to **pin 3 of J4201**.
3. Check if the 21 PIN AUDIO OUT is 0.5 ± 0.2Vrms.
4. Receive the SECAM UHF.
5. Check if the 21 PIN AUDIO OUT is 0.5 ± 0.2Vrms.

2-5: 21 PIN VIDEO OUT

1. Receive the PAL UHF.
2. Connect the oscilloscope to **TP4201**.
3. Check if the 21 PIN VIDEO OUT is 1.0 ± 0.2V.
4. Receive the SECAM UHF.
5. Check if the 21 PIN VIDEO OUT is 1.0 ± 0.2V.

2-6: E-E LEVEL

1. Receive the PAL color bar pattern. (Audio Video Input)
2. Connect the oscilloscope to **TP4201**.
3. Check if the VIDEO OUT LEVEL is 1 ± 0.2Vp-p.

2-7: COLOR LEVEL

1. Receive the color bar pattern.
2. Connect the oscilloscope to **TP4201**.
3. When setting to the Y-LEVEL 100%, check if the MAGENTA is 45 ± 10%.

(TV SECTION)

2-8: CONSTANT VOLTAGE

1. Using the remote control, set the brightness and contrast to normal position.
2. Connect the digital voltmeter to **TP501**.
3. Set condition is AV MODE without signal.
4. Adjust the **VR502** until the digital voltmeter is 135 ± 1V.

2-9: FOCUS

1. Receive a broadcast.
2. Turn the Focus Volume fully counterclockwise once.
3. Adjust the **Focus Volume** until picture is distinct.

2-10: HORIZONTAL POSITION

1. Receive the center cross signal from the Pattern Generator.
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(08)** on the remote control to select "H POSI (50)".
4. Press the VOL. UP/DOWN button on the remote control until the right and left screen size of the vertical line becomes the same.
5. Receive the cross hatch signal of NTSC. Then perform the above adjustments 2~4.

2-11: VERTICAL LINEARITY

NOTE: Adjust after performing adjustments in section 2-22.

1. Receive the cross hatch signal from the Pattern Generator.
2. Using the remote control, set the brightness and contrast to normal position.
3. Adjust the **VR401** until the SHIFT quantity of the OVER SCAN on upside and downside becomes minimum.

2-12: APR THRESHOLD

1. Receive the cross hatch signal from the Pattern Generator.
2. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(36)** on the remote control to select "APR THRESHOLD".
3. Check if the step No. APR THRESHOLD is "6".

2-13: VERTICAL SIZE

NOTE: Adjust after performing adjustments in section 2-11.

1. Receive the cross hatch signal from the Pattern Generator.
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(11)** on the remote control to select "V SIZE (50)".
4. Adjust by using the VOL. UP/DOWN button on the remote control so that the UP/DOWN OVER SCAN Quantity becomes equal to the Right/Left OVER SCAN Quantity.
5. Receive a broadcast and check if the picture is normal.
6. Receive the cross hatch signal of NTSC. Then perform the above adjustments 2~4.

2-14: OSD HORIZONTAL

1. Using the remote control, set the brightness and contrast to normal position.
2. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(31)** on the remote control to select "H POS OSD".
3. Press the VOL. UP/DOWN button on the remote control until the difference of A and B becomes minimum. **(Refer to Fig. 2-2)**

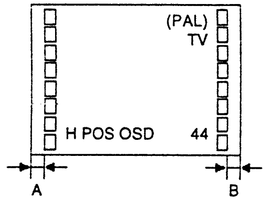


Fig. 2-2

2-15: CUT OFF

1. Set condition is AV MODE without signal.
2. Using the remote control, set the brightness and contrast to normal position.
3. Place the set with Aging Test for more than 15 minutes.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(00)** on the remote control to select "CUT OFF".
5. Adjust the **Screen Volume** until a dim raster is obtained.

2-16: BANDPASS

1. Receive the cross hatch signal from the Pattern Generator.
2. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(38)** on the remote control to select "BANDPASS".
3. Check if the step No. BANDPASS is "1".

2-17: WHITE BALANCE

NOTE: Adjust after performing CUT OFF adjustment.

1. Place the set with Aging Test for more than 15 minutes.
2. Receive the white 100% signal from the Pattern Generator.
3. Using the remote control, set the brightness and contrast to normal position.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(03)** on the remote control to select "R DRIVE".
5. Using the VOL. UP/DOWN button on the remote control, adjust the R DRIVE.
6. Press the CH. UP/DOWN button on the remote control to select the "R DRIVE", "G DRIVE", " M R CUTOFF" or "M G CUTOFF".
7. Using the VOL. UP/DOWN button on the remote control, adjust the R DRIVE, G DRIVE, M R CUTOFF or M G CUTOFF.
8. Perform the above adjustments 6 and 7 until the white color is looked like a white.

2-18: BRIGHT CENT

1. Receive the PAL black pattern*. (RF Input)
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(17)** on the remote control to select "BRIGHT CENT".
4. Press the VOL. UP/DOWN button on the remote control until the screen begin to shine.
5. Receive the PAL black pattern*. (Audio Video Input)
6. Press the AV button on the remote control to set to the AV mode. Then perform the above adjustments 2~4.

*The Black Pattern means the whole black raster signal. Select the "RASTER" of the pattern generator, set to the OFF position for each R, G and B.

2-19: CONTRAST CENT

1. Receive the color bar pattern.
2. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(20)** on the remote control to select "CONTRAST CENT".
3. Press the VOL. UP/DOWN button on on the remote control until the contrast step No. becomes "34".
4. Press the AV button on the remote control to set to the AV mode. Then perform the above adjustments 1~3.

2-20: SUB SHARPNESS

1. Receive the cross hatch signal from the Pattern Generator.
2. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(27)** on the remote control to select "SHARP".
3. Check if the step No. SHARPNESS is "3".
4. Press the AV button on the remote control to set to the AV mode. Then perform the above adjustments 1~3.

2-21: COLOR CENT

1. Receive the PAL color bar pattern. (RF Input)
2. Using the remote control, set the brightness, contrast and color to normal position.
3. Connect the oscilloscope to **TP803** (R803).
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(23)** on the remote control to select "COLOR CENT".
5. Adjust the VOLTS RANGE VARIABLE knob of the oscilloscope until the range between white 100% and 0% is set to 4 scales on the screen of the oscilloscope.
6. Press the VOL. UP/DOWN button on the remote control until the red color level is adjusted to 90±10% of the white level. **(Refer to Fig. 2-3)**
7. Receive the PAL color bar pattern. (Audio Video Input)
8. Press the AV button on the remote control to set to the AV mode. Then perform the above adjustments 2~6.
9. Receive the SECAM color bar pattern. (RF Input)
10. Using the remote control, set the brightness, contrast and color to normal position. Then perform the above adjustments 3~6.
11. Receive the SECAM color bar pattern. (Audio Video Input)
12. Press the AV button on the remote control to set to the AV mode. Then perform the above adjustments 2~6.

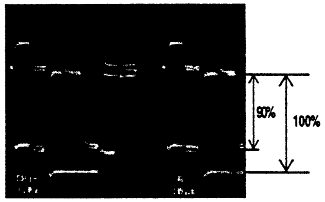


Fig. 2-3

2-22: VERITCAL POSITION

NOTE: Adjust after performing adjustments in section 2-10.

1. Receive the cross hatch signal from the Pattern Generator.
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(09)** on the remote control to select "V POSI (50)".
4. Check if the step No. V.POSI (50) is "5".
5. Adjust the **VR402** until the horizontal line becomes fit to notch of the shadow mask.
6. Receive the cross hatch signal of NTSC.
7. Using the remote control, set the brightness and contrast to normal position.
8. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(09)** on the remote control to select "V POSI (60)".
9. Check if the step No. V.POSI (60) is "10".

2-23: AGC GAIN

1. Receive the cross hatch signal from the Pattern Generator.
2. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(02)** on the remote control to select "AGC GAIN".
3. Check if the step No. AGC GAIN is "1".

2-24: CVBS OUT

1. Receive the cross hatch signal from the Pattern Generator.
2. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(35)** on the remote control to select "CVBS OUT".
3. Check if the step No. CVBS OUT is "25".

2-25: BELL FILTER

1. Receive the SECAM philps pattern.
2. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(37)** on the remote control to select "BELL FILTER".
3. Check if the step No. BELL FILTER is "0".

2-26: Confirmation of Fixed Value (Step No.)

Please check if the fixed values of the each adjustment items are set correctly referring below.

NO.	FUNCTION	RF (50Hz)	RF (60Hz)	AV
04	R CUTOFF	31	---	---
06	G CUTOFF	31	---	---
07	B DRIVE	31	---	---
18	BRIGHT MAX	55	---	---
19	BRIGHT MIN	20	---	---
21	CONTRAST MAX	50	---	---
22	CONTRAST MIN	10	---	---
24	COLOR MAX	60	---	---
25	COLOR MIN	10	---	---
26	TINT	3	---	---
30	M B CUTOFF	50	---	---

*To check for the fixed values of the RF (60Hz), indicate the adjustment mode screen while input the 60Hz video signal.

3. *PURITY AND CONVERGENCE ADJUSTMENTS*

NOTE

1. Turn the unit on and let it warm up for at least 30 minutes before performing the following adjustments.
2. Place the CRT surface facing east or west to reduce the terrestrial magnetism.
3. Turn ON the unit and demagnetize with a Degauss Coil.

3-1: STATIC CONVERGENCE (ROUGH ADJUSTMENT)

1. Tighten the screw for the magnet. Refer to the adjusted CRT for the position. **(Refer to Fig. 3-1)**
   If the deflection yoke and magnet are in one body, untighten the screw for the body.
2. Receive the green raster pattern from the color bar generator.
3. Slide the deflection yoke until it touches the funnel side of the CRT.
4. Adjust center of screen to green, with red and blue on the sides, using the pair of purity magnets.
5. Switch the color bar generator from the green raster pattern to the crosshatch pattern.
6. Combine red and blue of the 3 color crosshatch pattern on the center of the screen by adjusting the pair of 4 pole magnets.
7. Combine red/blue (magenta) and green by adjusting the pair of 6 pole magnets.
8. Adjust the crosshatch pattern to change to white by repeating steps 6 and 7.

3-2: PURITY

NOTE

Adjust after performing adjustments in section 3-1.

1. Receive the green raster pattern from color bar generator.
2. Adjust the pair of purity magnets to center the color on the screen.
   Adjust the pair of purity magnets so the color at the ends are equally wide.
3. Move the deflection yoke backward (to neck side) slowly, and stop it at the position when the whole screen is green.
4. Confirm red and blue color.
5. Adjust the slant of the deflection yoke while watching the screen, then tighten the fixing screw.

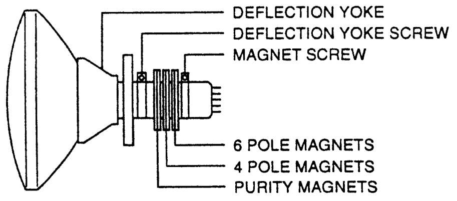

DEFLECTION YOKE
DEFLECTION YOKE SCREW
MAGNET SCREW
6 POLE MAGNETS
4 POLE MAGNETS
PURITY MAGNETS

Fig. 3-1

3-3: STATIC CONVERGENCE

NOTE

Adjust after performing adjustments in section 3-2.

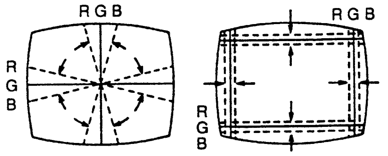
1. Receive the crosshatch pattern from the color bar generator.
2. Combine red and blue of the 3 color crosshatch pattern on the center of the screen by adjusting the pair of 4 pole magnets.
3. Combine red/blue (magenta) and green by adjusting the pair of 6 pole magnets.

3-4: DYNAMIC CONVERGENCE

NOTE

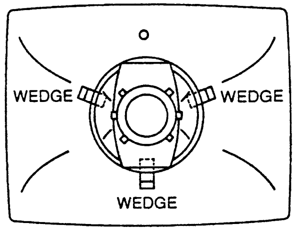
Adjust after performing adjustments in section 3-3.

1. Adjust the differences around the screen by moving the deflection yoke upward/downward and right/left. **(Refer to Fig. 3-2-a)**
2. Insert three wedges between the deflection yoke and CRT funnel to fix the deflection yoke. **(Refer to Fig. 3-2-b)**


R G B
R
G
B
R G B
R
G
B

UPWARD/DOWNWARD SLANT RIGHT/LEFT SLANT

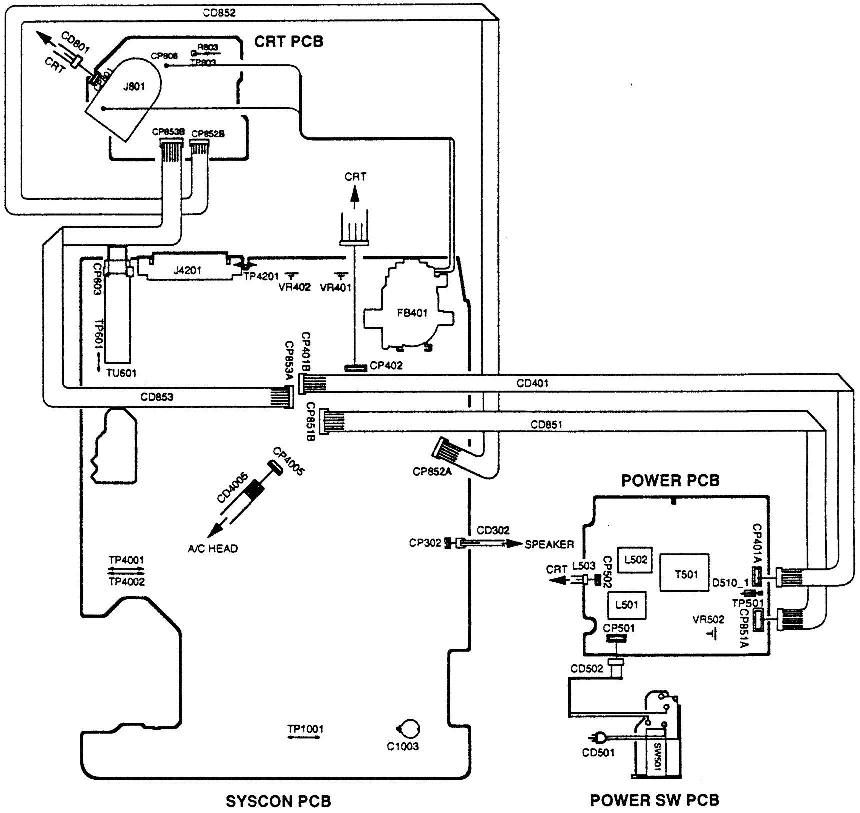
Fig. 3-2-a


WEDGE
WEDGE
WEDGE

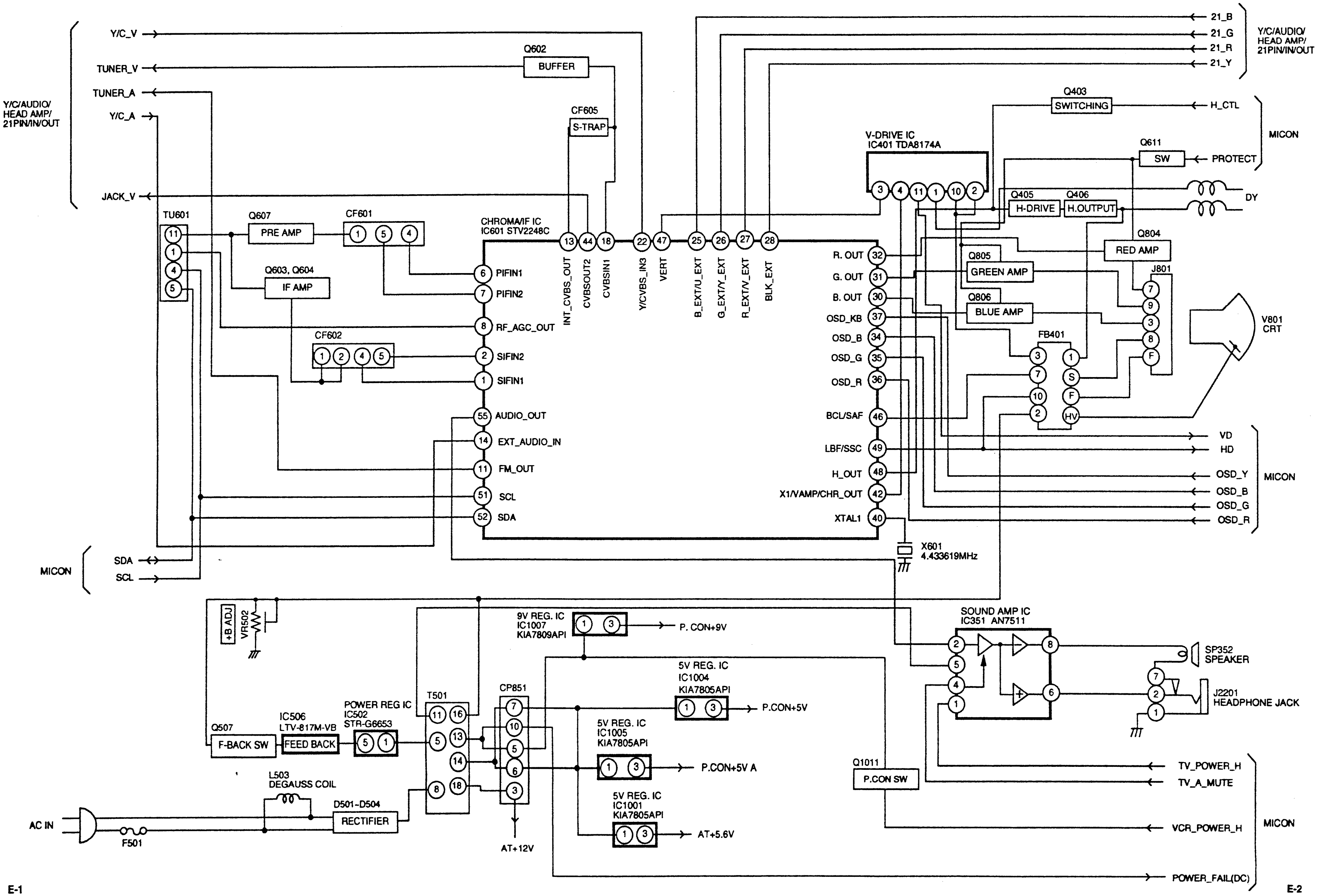
WEDGE POSITION

Fig. 3-2-b

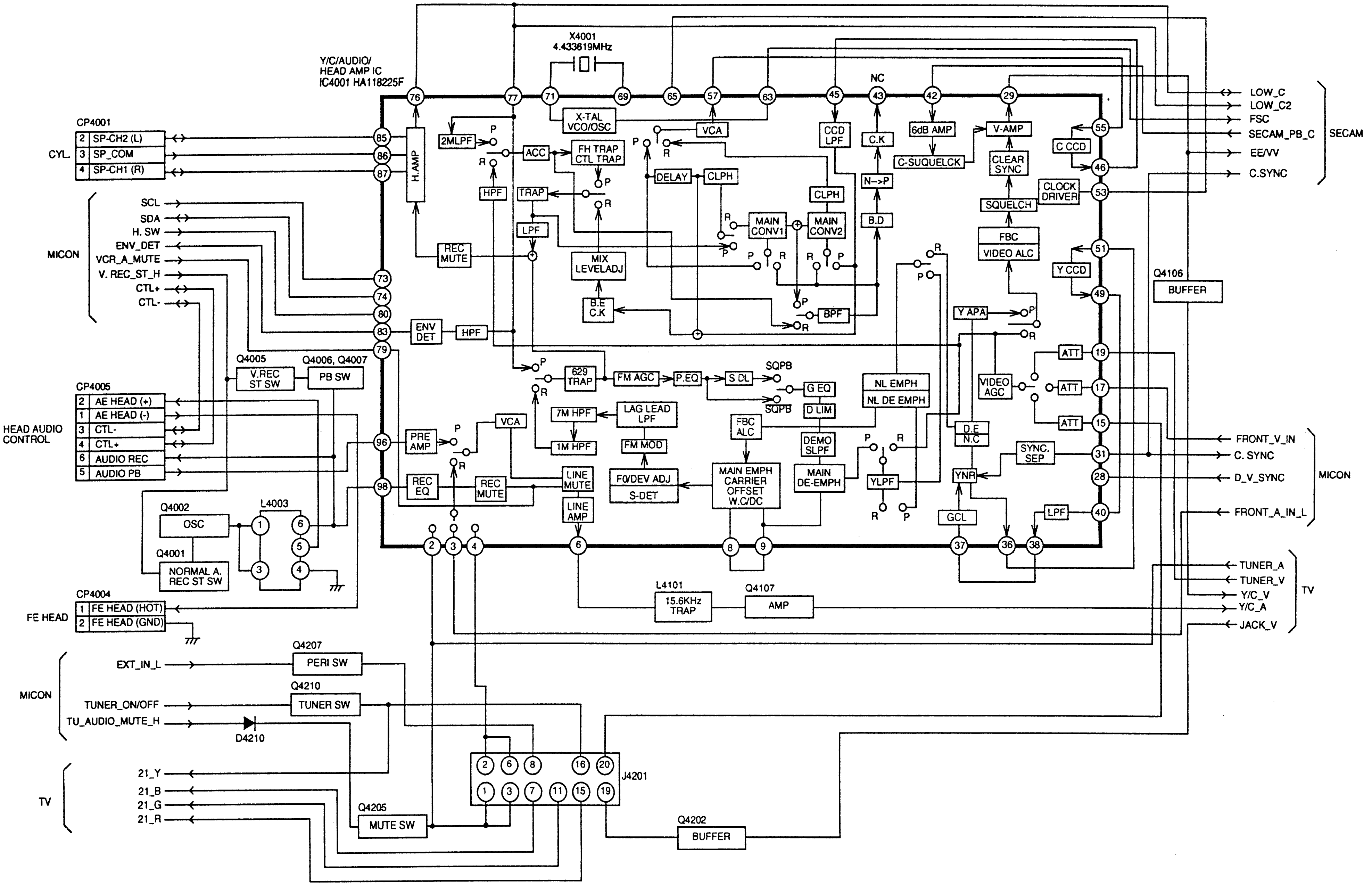
4. ELECTRICAL ADJUSTMENT PARTS LOCATION GUIDE (WIRING CONNECTION)


CD852
CD801
CRT
CRT PCB
CP806
R803
TP803
J801
CP853B
CP852B
CRT
CP603
J4201
TP4201
VR402
VR401
FB401
TP601
TU601
CP853A
CP401B
CP402
CD401
CD853
CP851B
CD851
CP852A
CP4005
CD4005
A/C HEAD
TP4001
TP4002
CD302
CP302
SPEAKER
POWER PCB
CRT
L503
CP502
L502
T501
CP401A
D510_1
TP501
L501
VR502
CP851A
CP501
CD502
TP1001
C1003
CD501
SW501
SYSCON PCB
POWER SW PCB

TV BLOCK DIAGRAM

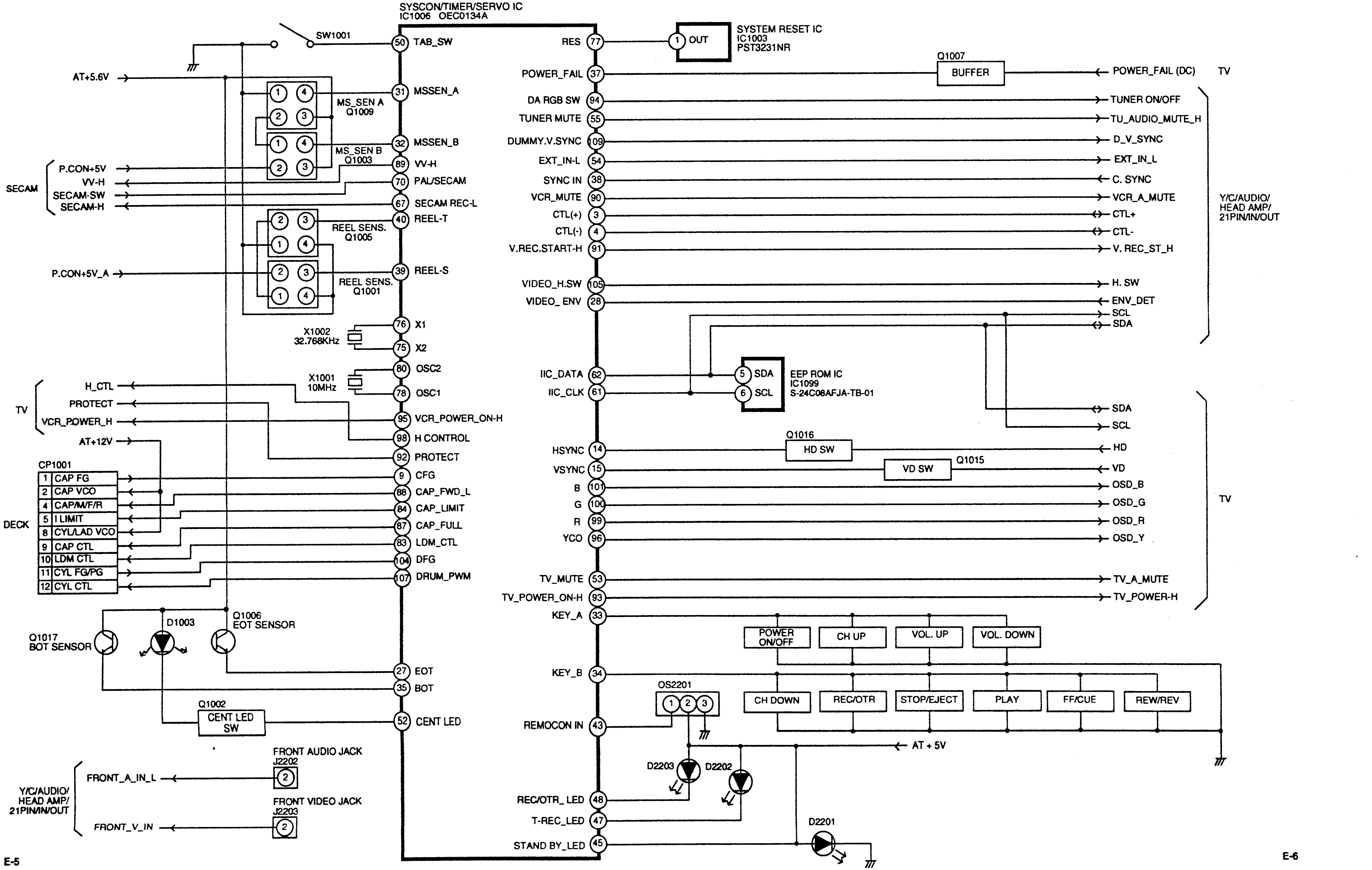

Y/C/AUDIO/
HEAD AMP/
21PIN/IN/OUT
Y/C_V
TUNER_V
TUNER_A
Y/C_A
JACK_V
Q602
BUFFER
CF605
S-TRAP
21_B
21_G
21_R
21_Y
Y/C/AUDIO/
HEAD AMP/
21PIN/IN/OUT
Q403
SWITCHING
H_CTL
MICON
Q611
SW
PROTECT
V-DRIVE IC
IC401 TDA8174A
3 4 11 1 10 2
Q405
H-DRIVE
Q406
H.OUTPUT
DY
TU601
11 1 4 5
Q607
PRE AMP
CF601
1 5 4
Q603, Q604
IF AMP
CF602
1 2 4 5
CHROMA/IF IC
IC601 STV2248C
13 44 18 22 47 25 26 27 28
INT_CVBS_OUT
CVBSOUT2
CVBSIN1
Y/CVBS_IN3
VERT
B_EXT/U_EXT
G_EXT/Y_EXT
R_EXT/V_EXT
BLK_EXT
6 PIFIN1
7 PIFIN2
8 RF_AGC_OUT
2 SIFIN2
1 SIFIN1
55 AUDIO_OUT
14 EXT_AUDIO_IN
11 FM_OUT
51 SCL
52 SDA
R. OUT 32
G. OUT 31
B. OUT 30
OSD_KB 37
OSD_B 34
OSD_G 35
OSD_R 36
BCL/SAF 46
LBF/SSC 49
H_OUT 48
X1/VAMP/CHR_OUT 42
XTAL1 40
X601
4.433619MHz
Q804
RED AMP
Q805
GREEN AMP
Q806
BLUE AMP
J801
7 9 3 8 F
V801
CRT
FB401
3 7 10 2
1 S F HV
VD
HD
OSD_Y
OSD_B
OSD_G
OSD_R
MICON
MICON
SDA
SCL
+B ADJ
VR502
9V REG. IC
IC1007
KIA7809API
1 3
P. CON+9V
5V REG. IC
IC1004
KIA7805API
1 3
P.CON+5V
5V REG. IC
IC1005
KIA7805API
1 3
P.CON+5V A
5V REG. IC
IC1001
KIA7805API
1 3
AT+5.6V
SOUND AMP IC
IC351 AN7511
2 5 4 1 8 6
SP352
SPEAKER
J2201
HEADPHONE JACK
7 2 1
Q507
F-BACK SW
IC506
LTV-817M-VB
FEED BACK
POWER REG IC
IC502
STR-G6653
5 1
T501
11 16 5 13 14 8 18
CP851
7 10 5 6 3
AT+12V
Q1011
P.CON SW
TV_POWER_H
TV_A_MUTE
VCR_POWER_H
MICON
POWER_FAIL(DC)
L503
DEGAUSS COIL
D501-D504
RECTIFIER
AC IN
F501

Y/C/AUDIO/HEAD AMP/21PIN/IN/OUT BLOCK DIAGRAM

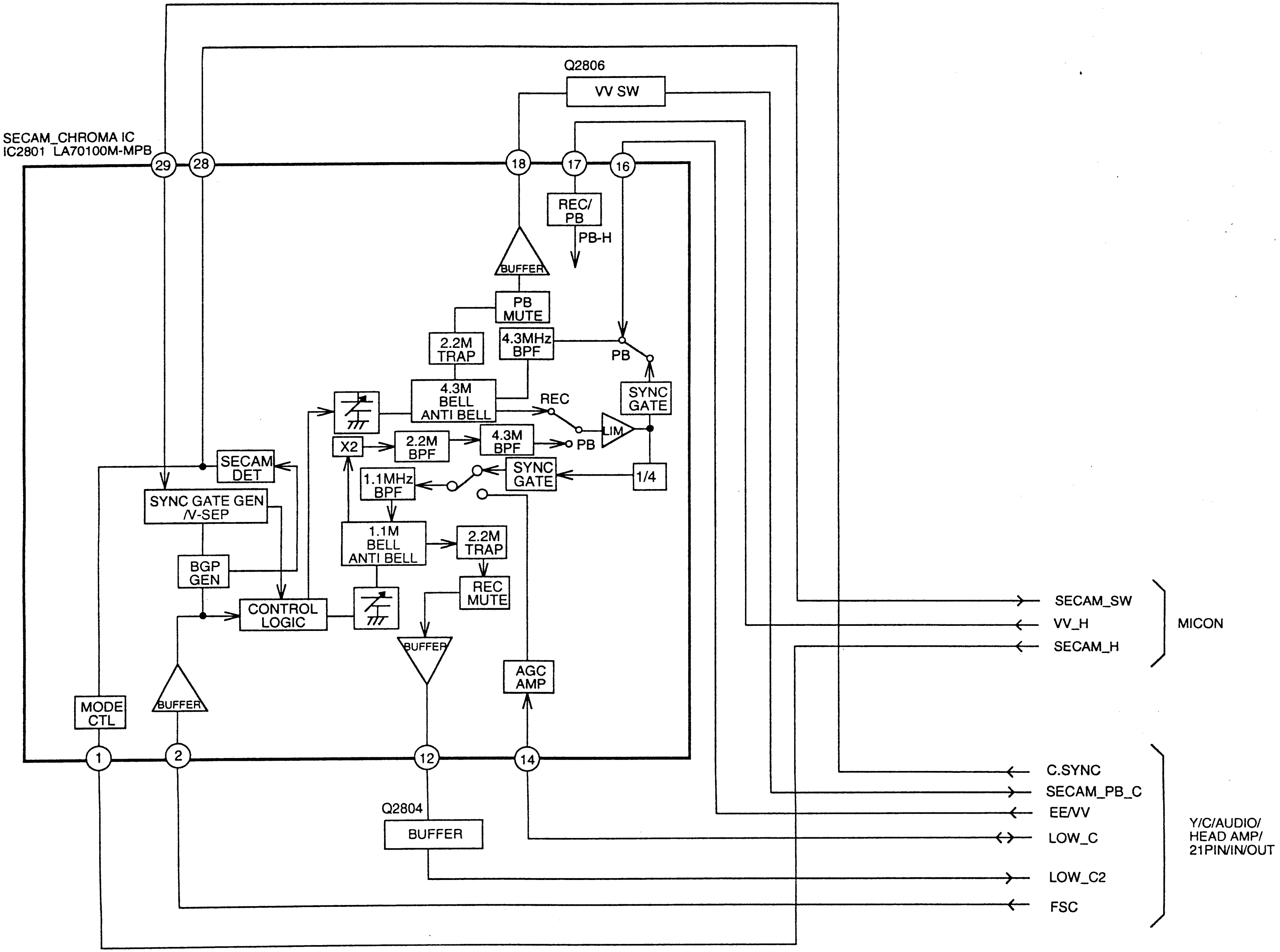


Y/C/AUDIO/
HEAD AMP IC
IC4001 HA118225F
X4001
4.433619MHz
CP4001
2 SP-CH2 (L)
3 SP_COM
4 SP-CH1 (R)
CYL.
MICON
SCL
SDA
H. SW
ENV_DET
VCR_A_MUTE
V. REC_ST_H
CTL+
CTL-
CP4005
2 AE HEAD (+)
1 AE HEAD (-)
3 CTL-
4 CTL+
6 AUDIO REC
5 AUDIO PB
HEAD AUDIO
CONTROL
Q4005
V.REC
ST SW
Q4006, Q4007
PB SW
Q4002
OSC
L4003
Q4001
NORMAL A.
REC ST SW
CP4004
1 FE HEAD (HOT)
2 FE HEAD (GND)
FE HEAD
H.AMP
2MLPF
ACC
FH TRAP
CTL TRAP
X-TAL
VCO/OSC
VCA
HPF
TRAP
LPF
REC
MUTE
MIX
LEVELADJ
B.E
C.K
DELAY
CLPH
MAIN
CONV1
MAIN
CONV2
CCD
LPF
C.K
N-->P
B.D
NC
6dB AMP
C-SUQUELCK
V-AMP
CLEAR
SYNC
SQUELCH
CLOCK
DRIVER
C CCD
FBC
VIDEO ALC
Y CCD
Y APA
BPF
ENV
DET
HPF
629
TRAP
FM AGC
P.EQ
S DL
SQPB
G EQ
D LIM
NL EMPH
NL DE EMPH
VIDEO
AGC
ATT
ATT
ATT
7M HPF
1M HPF
LAG LEAD
LPF
FM MOD
F0/DEV ADJ
S-DET
FBC
ALC
MAIN EMPH
CARRIER
OFFSET
W.C/DC
DEMO
SLPF
MAIN
DE-EMPH
YLPF
D.E
N.C
YNR
SYNC.
SEP
GCL
LPF
PRE
AMP
VCA
REC
EQ
REC
MUTE
LINE
MUTE
LINE
AMP
P
R
76 77 71 69 65 57 63 45 43 42 29
85 86 87 73 74 80 83 79 96 98
55 46 53 51 49 19 17 15 31 28 40
2 3 4 6 8 9 37 36 38
Q4106
BUFFER
LOW_C
LOW_C2
FSC
SECAM_PB_C
EE/VV
C.SYNC
SECAM
FRONT_V_IN
C. SYNC
D_V_SYNC
FRONT_A_IN_L
MICON
TUNER_A
TUNER_V
Y/C_V
Y/C_A
JACK_V
TV
L4101
15.6KHz
TRAP
Q4107
AMP
Q4207
PERI SW
Q4210
TUNER SW
EXT_IN_L
TUNER_ON/OFF
TU_AUDIO_MUTE_H
D4210
MICON
J4201
2 6 8 16 20
1 3 7 11 15 19
21_Y
21_B
21_G
21_R
TV
Q4205
MUTE SW
Q4202
BUFFER

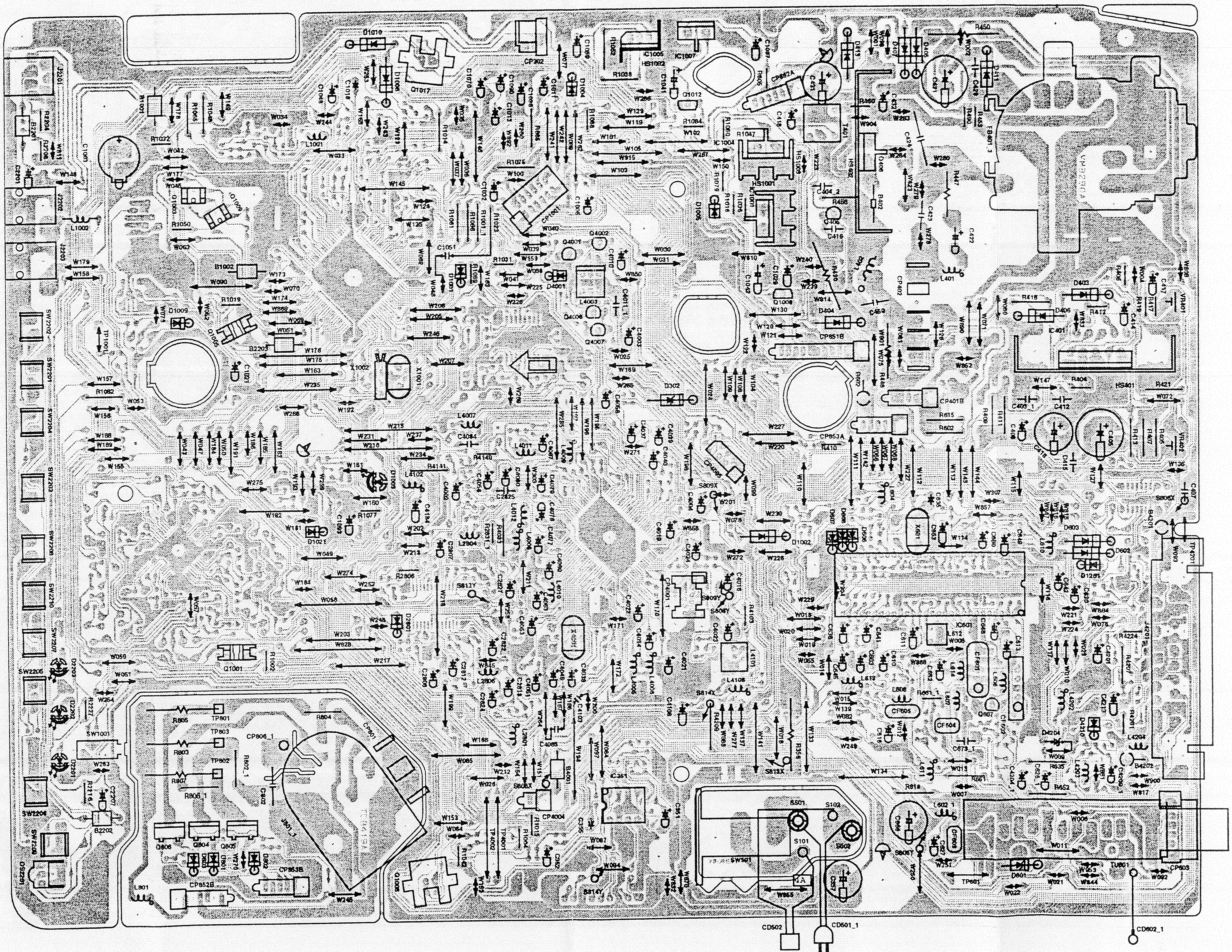
MICON BLOCK DIAGRAM


SYSCON/TIMER/SERVO IC
IC1006 OEC0134A
SW1001
50 TAB_SW
AT+5.6V
31 MSSEN_A
MS_SEN A
Q1009
32 MSSEN_B
MS_SEN B
Q1003
SECAM
P.CON+5V
VV-H
SECAM-SW
SECAM-H
89 VV-H
70 PAL/SECAM
67 SECAM REC-L
40 REEL-T
REEL SENS.
Q1005
P.CON+5V_A
39 REEL-S
REEL SENS.
Q1001
X1002
32.768KHz
76 X1
75 X2
X1001
10MHz
80 OSC2
78 OSC1
TV
H_CTL
PROTECT
VCR_POWER_H
95 VCR_POWER_ON-H
98 H CONTROL
92 PROTECT
AT+12V
CP1001
1 CAP FG
2 CAP VCO
4 CAP/M/F/R
5 I LIMIT
8 CYL/LAD VCO
9 CAP CTL
10 LDM CTL
11 CYL FG/PG
12 CYL CTL
DECK
9 CFG
88 CAP_FWD_L
84 CAP_LIMIT
87 CAP_FULL
83 LDM_CTL
104 DFG
107 DRUM_PWM
Q1017
BOT SENSOR
D1003
Q1006
EOT SENSOR
27 EOT
35 BOT
Q1002
CENT LED
SW
52 CENT LED
FRONT AUDIO JACK
J2202
Y/C/AUDIO/
HEAD AMP/
21PIN/IN/OUT
FRONT_A_IN_L
FRONT VIDEO JACK
J2203
FRONT_V_IN
RES 77
1 OUT
SYSTEM RESET IC
IC1003
PST3231NR
POWER_FAIL 37
Q1007
BUFFER
POWER_FAIL (DC)
TV
DA RGB SW 94
TUNER ON/OFF
TUNER MUTE 55
TU_AUDIO_MUTE_H
DUMMY.V.SYNC 109
D_V_SYNC
EXT_IN-L 54
EXT_IN_L
SYNC IN 38
C. SYNC
VCR_MUTE 90
VCR_A_MUTE
CTL(+) 3
CTL+
CTL(-) 4
CTL-
V.REC.START-H 91
V. REC_ST_H
VIDEO_H.SW 105
H. SW
VIDEO_ ENV 28
ENV_DET
SCL
SDA
Y/C/AUDIO/
HEAD AMP/
21PIN/IN/OUT
IIC_DATA 62
IIC_CLK 61
5 SDA
6 SCL
EEP ROM IC
IC1099
S-24C08AFJA-TB-01
SDA
SCL
Q1016
HD SW
HSYNC 14
HD
VSYNC 15
VD SW
Q1015
VD
B 101
OSD_B
G 100
OSD_G
R 99
OSD_R
YCO 96
OSD_Y
TV
TV_MUTE 53
TV_A_MUTE
TV_POWER_ON-H 93
TV_POWER-H
KEY_A 33
POWER ON/OFF
CH UP
VOL. UP
VOL. DOWN
KEY_B 34
OS2201
CH DOWN
REC/OTR
STOP/EJECT
PLAY
FF/CUE
REW/REV
REMOCON IN 43
AT + 5V
D2203
D2202
REC/OTR_ LED 48
T-REC_LED 47
D2201
STAND BY_LED 45

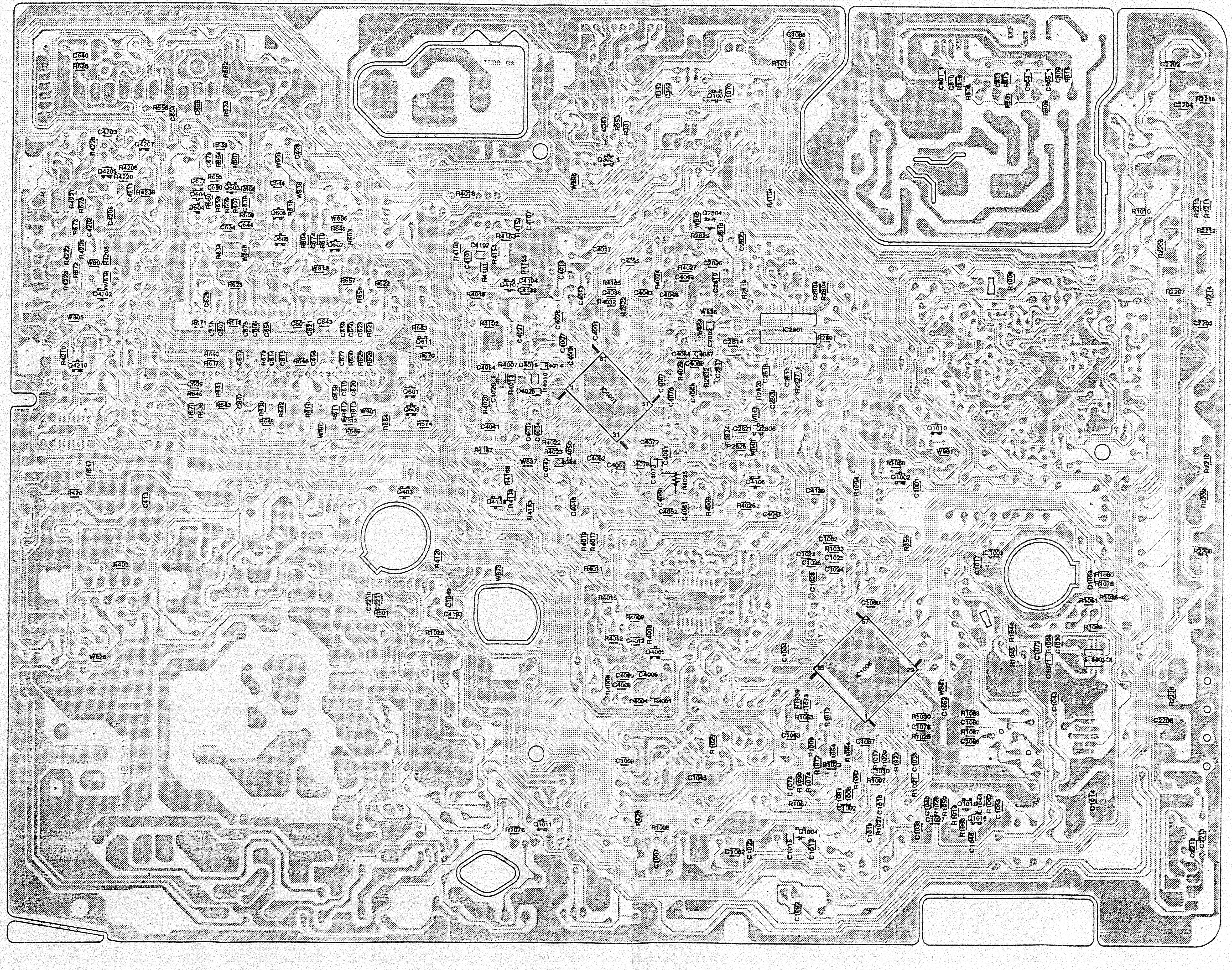
SECAM BLOCK DIAGRAM


SECAM_CHROMA IC
IC2801 LA70100M-MPB
29
28
18
17
16
Q2806
VV SW
REC/
PB
PB-H
BUFFER
PB
MUTE
2.2M
TRAP
4.3MHz
BPF
PB
SYNC
GATE
4.3M
BELL
ANTI BELL
REC
LIM
X2
2.2M
BPF
4.3M
BPF
PB
1.1MHz
BPF
SYNC
GATE
1/4
SECAM
DET
SYNC GATE GEN
/V-SEP
BGP
GEN
1.1M
BELL
ANTI BELL
2.2M
TRAP
REC
MUTE
CONTROL
LOGIC
BUFFER
AGC
AMP
MODE
CTL
BUFFER
1
2
12
14
Q2804
BUFFER
SECAM_SW
VV_H
SECAM_H
MICON
C.SYNC
SECAM_PB_C
EE/VV
LOW_C
LOW_C2
FSC
Y/C/AUDIO/
HEAD AMP/
21PIN/IN/OUT

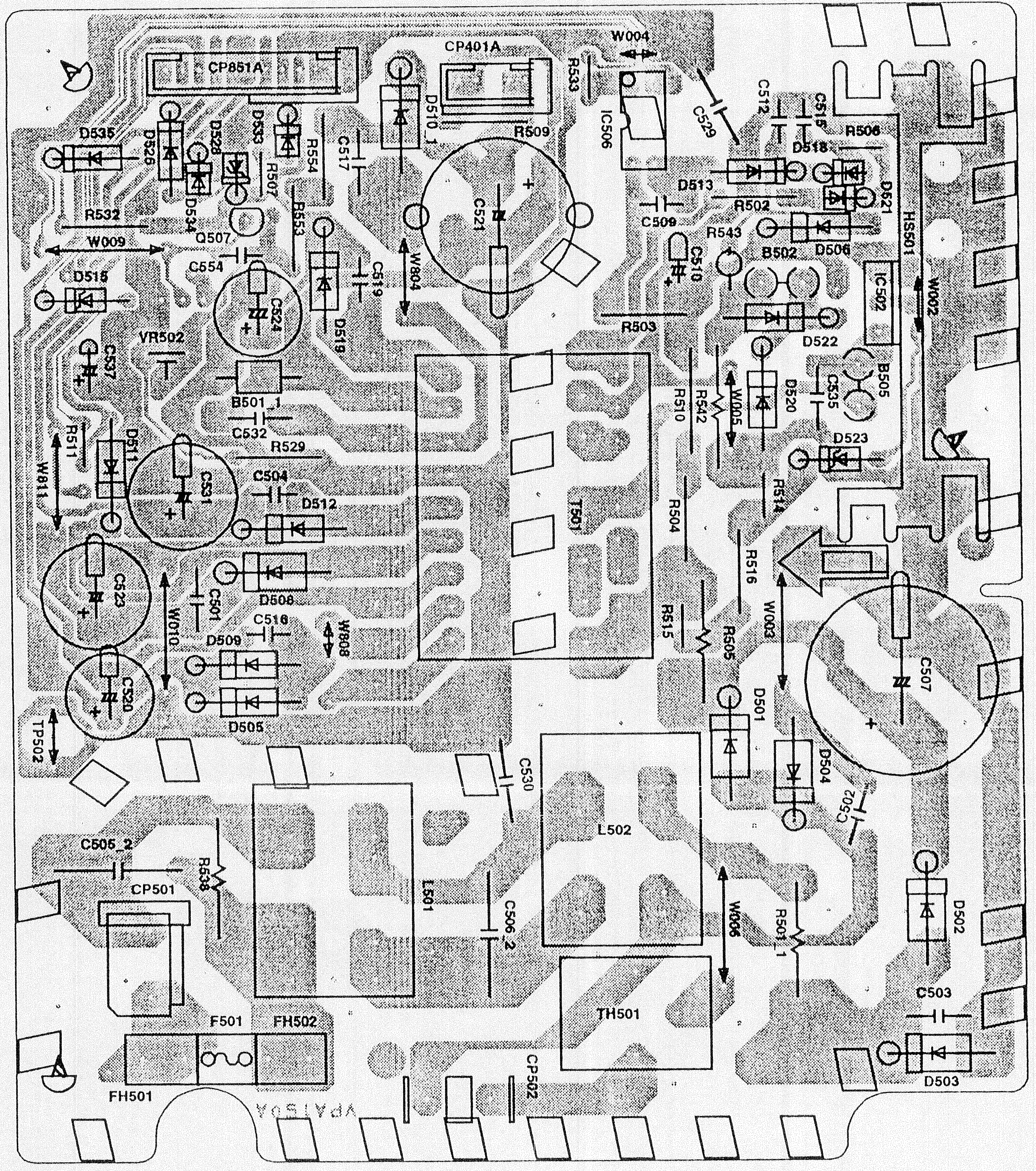
PRINTED CIRCUIT BOARDS
SYSCON/CRT/POWER SW (INSERTED PARTS)
SOLDER SIDE


J2201
J2202
J2203
D1010
Q1017
CP302
IC1005
HS1002
IC1007
Q1012
R1038
R1047
IC1004
HS1001
T401
R450
L1001
L1002
W145
W124
W125
W100
W103
W105
W119
W129
IC1001
Q4002
Q4001
D4001
L4003
Q4007
B1002
B2203
X1002
X1001
W090
W176
W175
W163
W235
W206
W205
W246
W207
W030
W031
W130
W120
W121
CP851B
D404
D403
D406
IC401
R416
R412
HS401
R421
R404
W147
C412
CP401B
R615
R602
CP853A
R410
W227
W220
D302
L4007
C4084
R4140
W213
W231
W216
W234
W237
W275
W182
W181
D1021
W160
R1077
D1009
W049
W274
W184
W252
W058
W203
W828
W217
R2806
D2801
Q1001
R1002
S813Y
S809X
S809Y
S806Y
D1002
W236
W228
D607
D608
D605
X601
IC601
D603
D602
D1201
W221
W224
L612
W008
CF601
CF605
CF604
Q607
L607
L4204
B4202
W900
W817
D4204
W009
R635
R652
R814
W134
W013
W007
W006
W011
D601
TU601
TP601
W022
W021
W092
CP603
CD602_1
S501
S101
S102
S502
SW501
W865
CD502
CD501_1
C357
IC351
L4101
L4108
S814X
S815X
S814Y
S808X
B4001
CP4004
W084
W087
W153
W064
TP4001
TP4002
Q1008
CP806_1
CP801
J801_1
TP801
TP803
TP802
R805
R803
R807
R806_1
R802_1
R804
Q806
Q804
Q805
CP853B
CP852B
L801
W245
SW1001
SW2201
SW2202
SW2203
SW2204
SW2205
SW2206
SW2207
SW2208
SW2209
SW2210
B2202
W157
R1082
W156
W188
W189
W155
W053
W059
W051
W254
W263
W179
W158
W148
R1050
R1032
R1019
W173
W070
W174
W069
W051
W192
W258

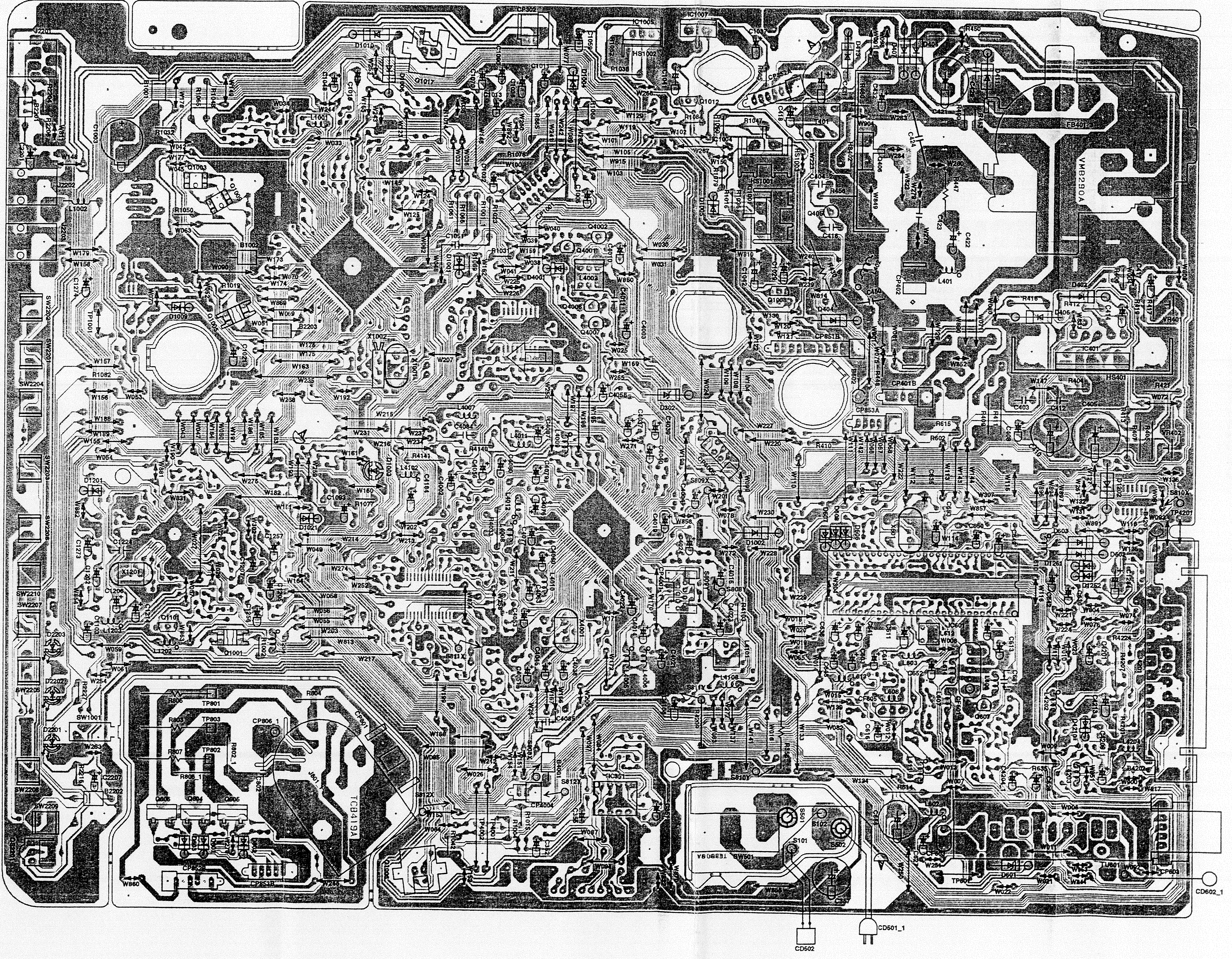
PRINTED CIRCUIT BOARDS
SYSCON/CRT (CHIP MOUNTED PARTS)
SOLDER SIDE


IC4001
IC1006
IC2901
IC1003
C1006
R1011
C2202
C2204
R2216
R1030
R2212
R2214
R2207
C2203
R2210
R2209
R2206
R2215
C2206
C640
R636
C4203
C4207
R4210
W505
R470
R403
W625
R4018
C4017
C4035
C4049
C2814
C1010
W801
C1060
C1030
C1087
C1046
C1002
R1006
R1076
Q1011
R4001
R4004
R4015
R4012
C4005
C4006
C4012
C4403
C4118
R4120
W878
C2210
R601
R1023
C4193
R1096
R1060
R1078
R1046
R1031

PRINTED CIRCUIT BOARDS
POWER
SOLDER SIDE

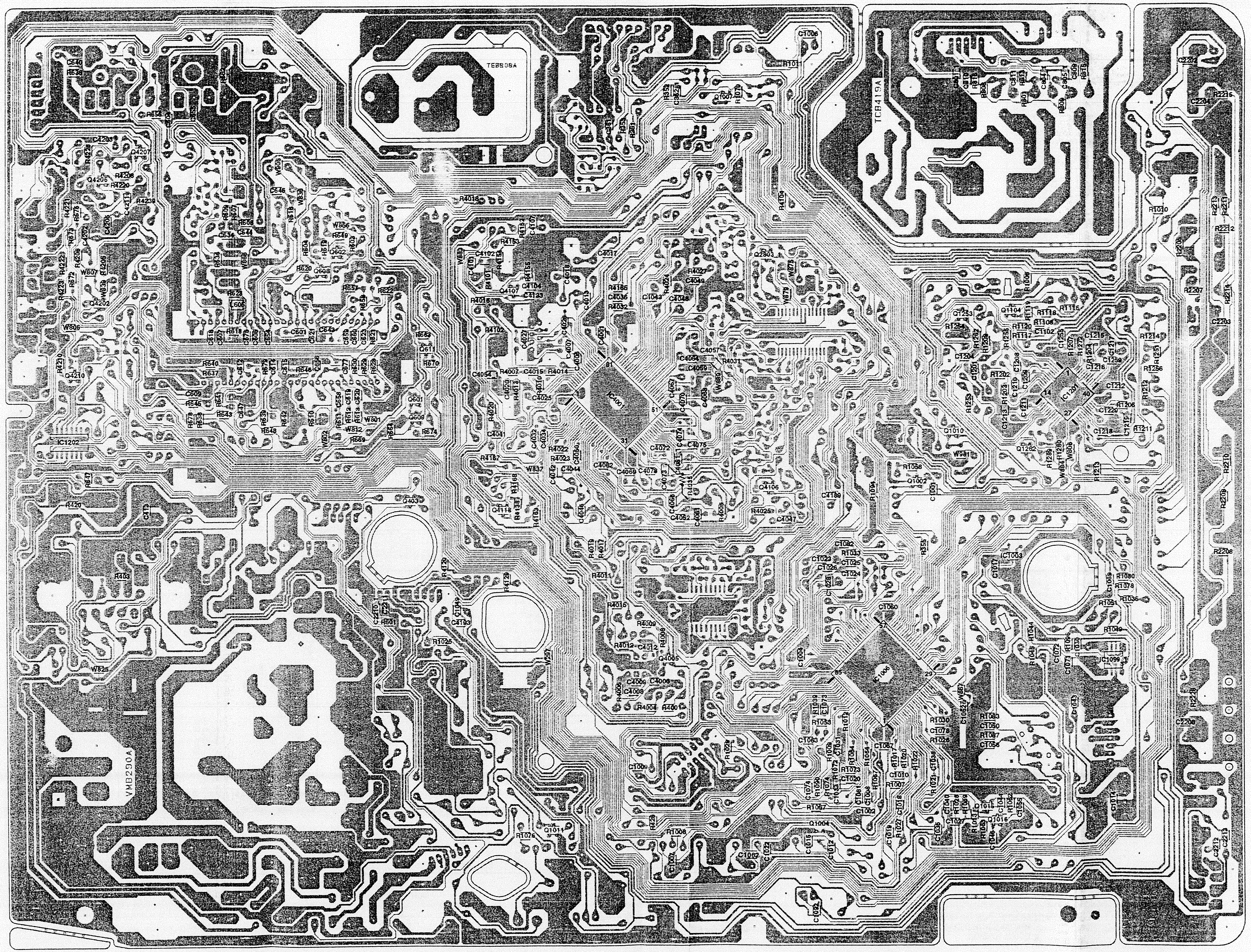

CP851A
CP401A
W004
R533
IC506
C529
C512
C515
R506
D518
D521
HS501
W002
IC502
B505
C535
D523
D535
D526
D528
D533
R554
R507
R553
C517
D510_1
R509
C521
D513
R502
C509
R543
C510
B502
D506
D522
R532
D534
Q507
W009
C554
C519
W804
D519
C524
R503
D515
VR502
C537
B501_1
C532
R529
T501
R510
R542
W005
D520
R511
W811
D511
C531
C504
D512
R504
R514
R516
C523
C501
D508
W010
C516
W808
D509
D505
R515
R505
W003
D501
C507
C520
TP502
C530
D504
C502
C505_2
R538
CP501
L501
L502
C506_2
W006
R501_1
D502
TH501
C503
F501
FH502
FH501
CP502
D503
VPA150A

PRINTED CIRCUIT BOARDS
SYSCON/CRT/POWER SW (INSERTED PARTS)
SOLDER SIDE
COMBI 3602 SI


VMB290A
TCB419A
CD502
CD501_1
CD602_1

ADD C681, C1103
C1202, C1205
C1206, C1207
C1214, C1224
C1256, C1257
C1273, C1274
C1284, D1201
D1202, D1252
Q1101, L603
L1202, L1203
L1204, X1201
S810, S811
S812, W813
W831, W849
W854, W863
W874, W881
W882, W891
W894, W896
W897

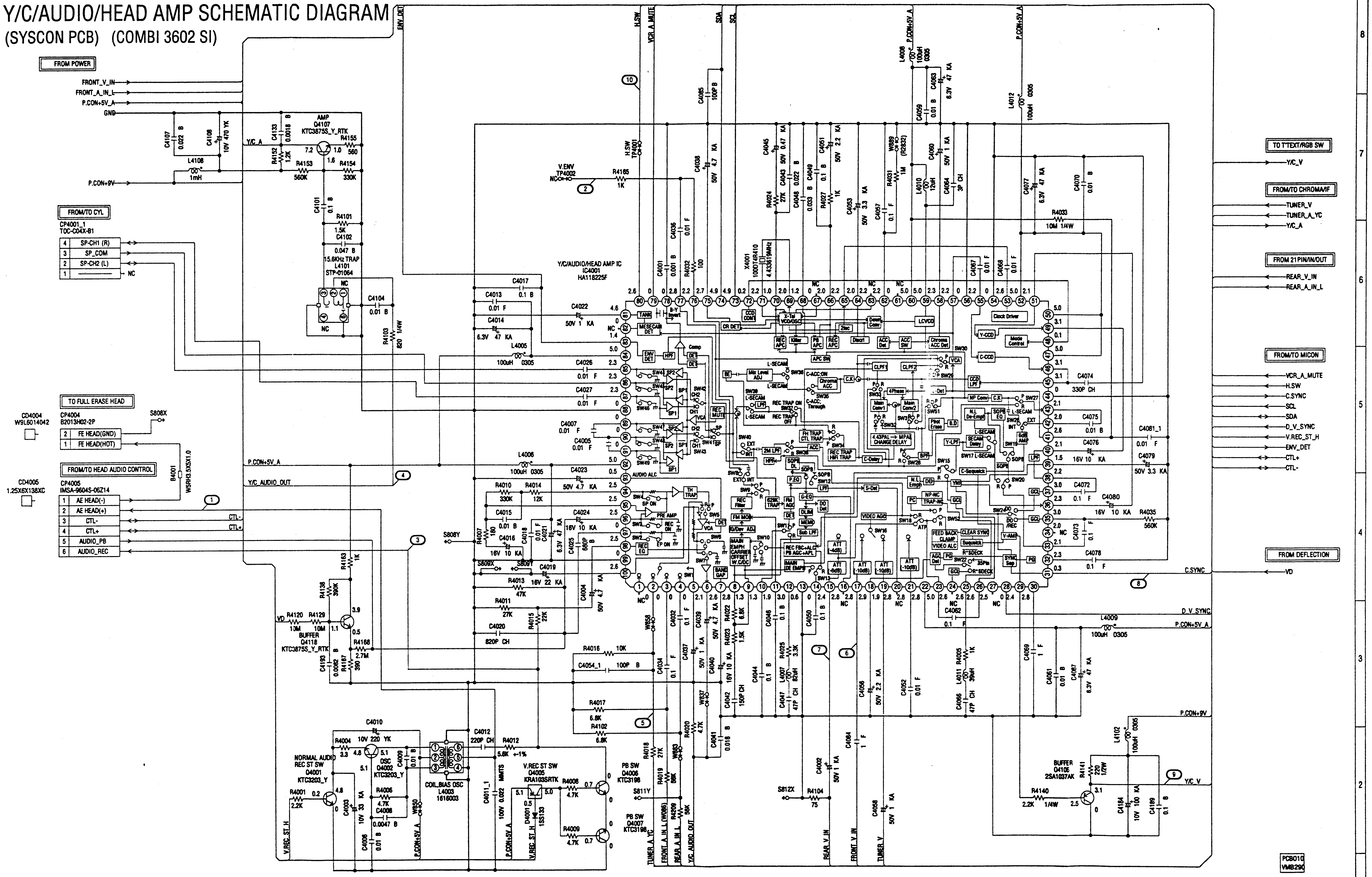
PRINTED CIRCUIT BOARDS
SYSCON/CRT (CHIP MOUNTED PARTS)
SOLDER SIDE
COMBI 3602 SI


TEB508A
TCR419A
VMB290A
IC1202
IC4001
IC1201
IC1006
IC1053
IC1099
C1006
R1010
Q4205
Q4207
Q4202
Q4210
Q4107
Q2803
Q1104
Q1253
Q1262
Q1010
Q1007
Q1004
Q1011
W806
W807
W825
W837
W879
W883
W884
W889
W891
R4018
R4102
R4187
R4025
R4012
R4004
C4101
C4104
C4042
C4106
C4189
C1082
C1009
C1080
C2204
C2203
C2206
C2212
C2213
R2207
R2212
R2210
R2209
R2208
R2216

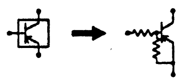
ADD R620, R1108
R1115, R1117
R1118, R1119
R1120, R1202
R1203, R1204
R1206, R1207
R1209, R1211
R1212, R1213
R1214, R1251
R1253, R1254
R1255, R1256
R1262, R1272
R1280, R1289
R4031, R4129
C1020, C1031
C1033, C1102
C1201, C1204
C1208, C1209
C1210, C1211
C1212, C1213
C1215, C1216
C1217, C1218
C1219, C1220
C1255, C1259
C4074, C4075
IC1201, IC1202
Q608, Q1104
Q1253, Q1262
Q2803, L605
W806, W875
W879, W883
W884, W889

Y/C/AUDIO/HEAD AMP SCHEMATIC DIAGRAM

(SYSCON PCB) (COMBI 3602 SI)


FROM POWER
FRONT_V_IN
FRONT_A_IN_L
P.CON+5V_A
GND
P.CON+9V
FROM/TO CYL
CP4001_1
TOC-C04X-B1
SP-CH1 (R)
SP_COM
SP-CH2 (L)
NC
TO FULL ERASE HEAD
CD4004
W9L6014042
CP4004
B2013H02-2P
FE HEAD(GND)
FE HEAD(HOT)
S808X
FROM/TO HEAD AUDIO CONTROL
CD4005
1.25X6X138XC
CP4005
IMSA-9604S-06Z14
AE HEAD(-)
AE HEAD(+)
CTL-
CTL+
AUDIO_PB
AUDIO_REC
B4001
W5RH3.5X5X1.0
AMP
Q4107
KTC3875S_Y_RTK
Y/C_A
C4107 0.022 B
C4106 10V 470 KA
C4133 0.0018 B
R4152 1.2K
R4155 560
R4153 560K
R4154 330K
L4106 1mH
C4101 0.1 B
R4101 1.5K
C4102 0.047 B
15.5KHz TRAP
L4101
STP-01064
C4104 0.01 B
R4103 820 1/4W
P.CON+5V_A
Y/C_AUDIO_OUT
VD
R4120 13M
R4129 10M
BUFFER
Q4118
KTC3875S_Y_RTK
R4138 390K
R4163 1K
R4168 2.7M
R4187 390
C4193 0.0082 B
S808Y
S809X
S809Y
NORMAL AUDIO
REC ST SW
Q4001
KTC3203_Y
R4001 2.2K
C4003 10V 33 KA
R4004 3.3
C4010 10V 220 YK
OSC
Q4002
KTC3203_Y
R4006 4.7K
C4008 0.0047 B
C4006 0.01 B
C4009 0.01 B
W850
COIL_BIAS OSC
L4003
1616003
C4012 220P CH
R4012 5.6K ±1%
C4011_1 100V 0.022 MMTS
V.REC ST SW
Q4005
KRA103SRTK
D4001 1SS133
R4008 4.7K
R4009 4.7K
PB SW
Q4006
KTC3198
PB SW
Q4007
KTC3198
S811Y
V.REC_ST_H
P.CON+5V_A
V.REC_ST_H
ENV_DET
H.SW
VCR_A_MUTE
SDA
SCL
P.CON+5V_A
P.CON+5V_A
V.ENV
TP4002
R4165 1K
H.SW
TP4001
C4085 100P B
C4038 50V 4.7 KA
C4036 0.001 B
C4001 0.001 B
R4032 100
C4045 50V 0.47 KA
R4024 27K
C4043 0.022 B
C4048 0.033 B
C4049 0.1 B
R4027 1K
C4051 50V 2.2 KA
C4053 50V 3.3 KA
C4057 0.1 F
R4031 1M
W889 (R2832)
L4010 12uH
C4060 50V 1 KA
C4064 3P CH
C4059 0.01 B
L4008 100uH 0305
C4063 6.3V 47 KA
L4012 100uH 0305
C4077 6.3V 47 KA
C4070 0.01 B
R4033 10M 1/4W
C4067 0.01 F
C4068 0.01 F
X4001 1000T4R410 4.433619MHz
Y/C/AUDIO/HEAD AMP IC
IC4001
HA118225F
C4017 0.1 B
C4013 0.01 F
C4014 6.3V 47 KA
C4022 50V 1 KA
L4005 100uH 0305
C4026 0.01 F
C4027 0.01 F
C4007 0.01 F
C4005 0.01 F
L4006 100uH 0305
C4023 50V 4.7 KA
R4010 330K
R4014 12K
C4015 0.01 B
R4007 180
C4016 16V 10 KA
C4018 0.01 F
C4021 6.3V 47 KA
C4024 16V 10 KA
C4025 680P B
C4019 16V 22 KA
R4013 47K
R4011 27K
C4004 50V 4.7 KA
C4020 820P CH
R4015 22K
R4016 10K
C4054_1 100P B
C4034 0.1 F
R4017 6.8K
R4102 6.8K
W858
C4032 0.1 F
C4039 50V 1 KA
C4037 50V 1 KA
W837
R4020 4.7K
R4018 27K
R4019 56K
W863
R4209 56K
C4040 16V 10 KA
C4041 0.018 B
R4022 6.8K
R4023 1.5K
C4042 150P CH
C4046 0.1 B
C4044 0.1 B
R4025 3.3K
L4007 82uH
C4047 47P CH
C4050 0.1 B
C4084 1 F
C4002 50V 1 KA
S812X
R4104 75
C4056 50V 2.2 KA
C4058 50V 1 KA
C4052 0.01 F
R4005 1K
L4011 39uH
C4066 47P CH
C4062 0.1 F
L4009 100uH 0305
C4069 1 F
C4061 0.01 B
C4087 6.3V 47 KA
C4074 330P CH
C4075 0.01 B
C4076 16V 10 KA
C4072 0.1 F
C4080 16V 10 KA
R4035 560K
C4073 0.1 F
C4078 0.1 F
C4081_1 0.01 F
C4079 50V 3.3 KA
TUNER_A_YC
FRONT_A_IN_L (W065)
REAR_A_IN_L
Y/C_AUDIO_OUT
REAR_V_IN
FRONT_V_IN
TUNER_V
TO T'TEXT/RGB SW
Y/C_V
FROM/TO CHROMA/IF
TUNER_V
TUNER_A_YC
Y/C_A
FROM 21PIN/IN/OUT
REAR_V_IN
REAR_A_IN_L
FROM/TO MICON
VCR_A_MUTE
H.SW
C.SYNC
SCL
SDA
D_V_SYNC
V.REC_ST_H
ENV_DET
CTL+
CTL-
FROM DEFLECTION
VD
C.SYNC
D_V_SYNC
P.CON+5V_A
P.CON+9V
L4102 100uH 0305
BUFFER
Q4106
2SA1037AK
R4141 220 1/2W
R4140 2.2K 1/4W
C4184 10V 100 KA
C4189 0.1 B
Y/C_V
PCB010
VMB290

CAUTION: DIGITAL TRANSISTOR

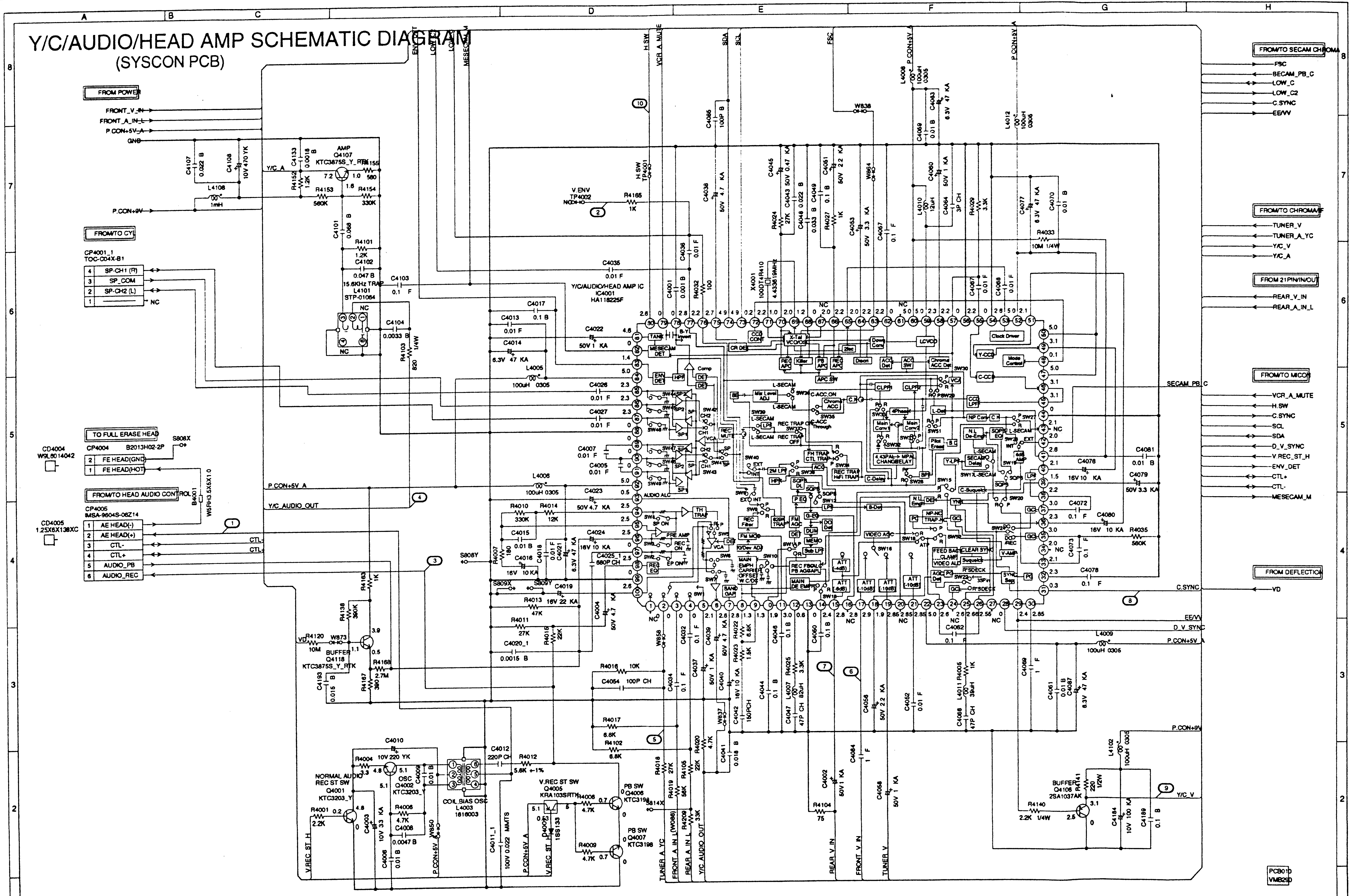


NOTE:THE DC VOLTAGE EACH PART WAS
MEASURED WITH THE DIGITAL TESTER
DURING PLAYBACK.

NOTE:THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME
OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

Y/C/AUDIO/HEAD AMP SCHEMATIC DIAGRAM

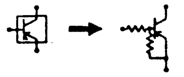
(SYSCON PCB)


FROM POWER
FRONT_V_IN
FRONT_A_IN_L
P.CON+5V_A
GND
P.CON+9V
FROM/TO CYL
CP4001_1
TOC-C04X-B1
SP-CH1 (R)
SP_COM
SP-CH2 (L)
NC
TO FULL ERASE HEAD
CP4004 B2013H02-2P
FE HEAD(GND)
FE HEAD(HOT)
CD4004
W5L8014042
S808X
FROM/TO HEAD AUDIO CONTROL
CP4005
IMSA-9604S-06Z14
AE HEAD(-)
AE HEAD(+)
CTL-
CTL+
AUDIO_PB
AUDIO_REC
CD4005
1.25X6X138XC
B4001
W5RH3.5X6X1.0
P.CON+5V_A
Y/C_AUDIO_OUT
AMP
Q4107
KTC3875S_Y_RTK
BUFFER
Q4118
KTC3875S_Y_RTK
L4101
STP-01064
15.6KHz TRAP
Y/C/AUDIO/HEAD AMP IC
IC4001
HA118225F
X4001
4.43361 9MHz
V.ENV
TP4002
H.SW
TP4001
NORMAL AUDIO
REC ST SW
Q4001
KTC3203_Y
OSC
Q4002
KTC3203_Y
COIL BIAS OSC
L4003
1616003
V.REC ST SW
Q4005
KRA103SRTK
PB SW
Q4006
KTC3198
PB SW
Q4007
KTC3198
BUFFER
Q4106
2SA1037AK
V.REC_ST_H
P.CON+5V_A
V.REC_ST_L
TUNER_A_YC
FRONT_A_IN_L (W086)
REAR_A_IN_L
Y/C_AUDIO_OUT
REAR_V_IN
FRONT_V_IN
TUNER_V
ENV_DET
LOW_C
LOW_C2
MESECAM_M
H.SW
VCR_A_MUTE
SDA
SCL
FSC
P.CON+5V_A
P.CON+5V_A
FROM/TO SECAM CHROMA
FSC
SECAM_PB_C
LOW_C
LOW_C2
C.SYNC
EE/VV
FROM/TO CHROMA/IF
TUNER_V
TUNER_A_YC
Y/C_V
Y/C_A
FROM 21PIN/IN/OUT
REAR_V_IN
REAR_A_IN_L
FROM/TO MICON
VCR_A_MUTE
H.SW
C.SYNC
SCL
SDA
D_V_SYNC
V.REC_ST_H
ENV_DET
CTL+
CTL-
MESECAM_M
FROM DEFLECTION
VD
SECAM_PB_C
C.SYNC
EE/VV
D_V_SYNC
P.CON+5V_A
P.CON+9V
Y/C_V
PCB010
VMB290
A
B
C
D
E
F
G
H
1
2
3
4
5
6
7
8

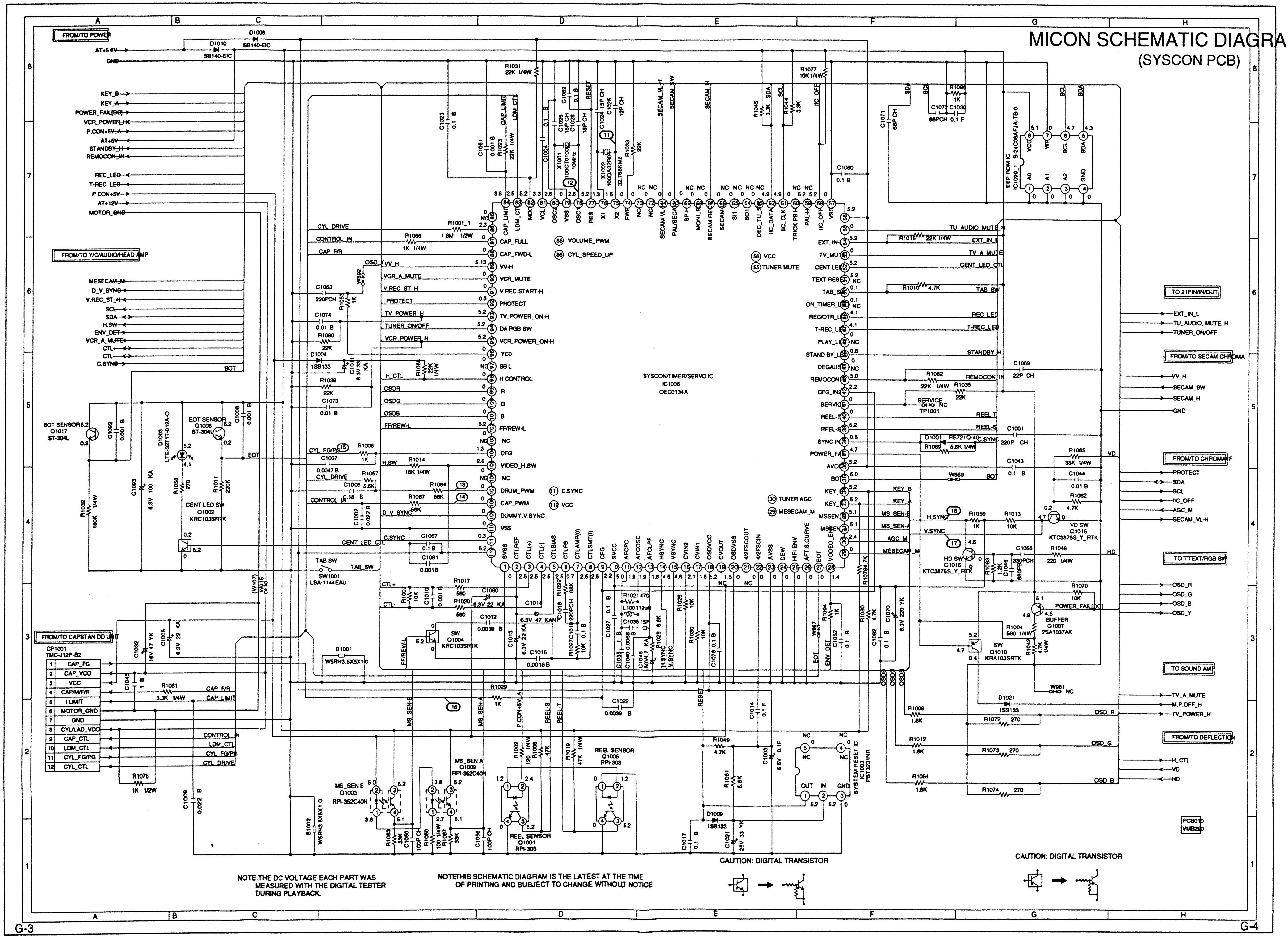
NOTE:THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

NOTE:THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE

CAUTION: DIGITAL TRANSISTOR



MICON SCHEMATIC DIAGRAM
(SYSCON PCB)

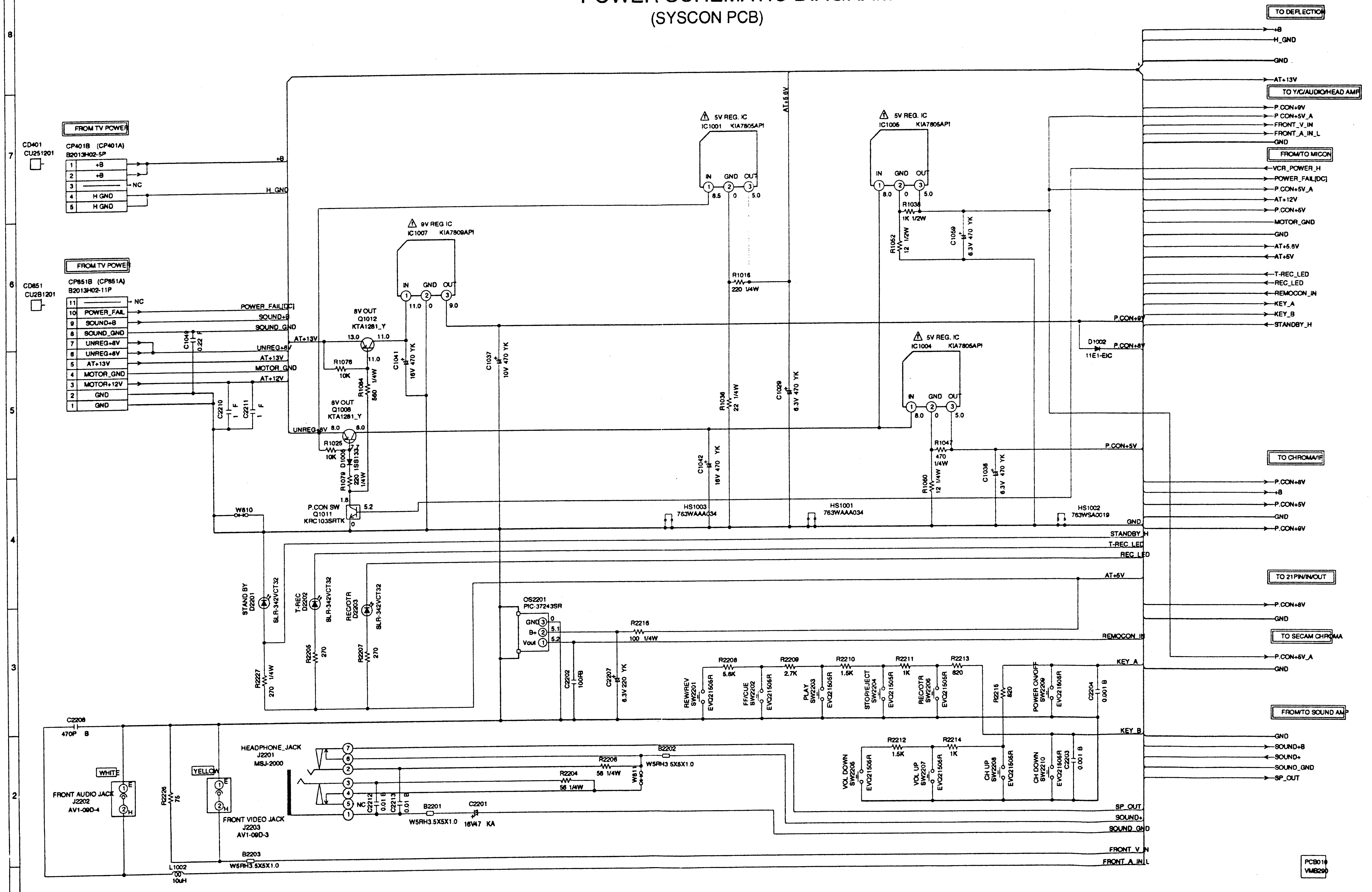

FROM/TO POWER
AT+5.6V
GND
KEY_B
KEY_A
POWER_FAIL[DC]
VCR_POWER_H
P.CON+5V_A
AT+5V
STANDBY_H
REMOCON_IN
REC_LED
T-REC_LED
P.CON+5V
AT+12V
MOTOR_GND
FROM/TO Y/C/AUDIO/HEAD AMP
MESECAM_M
D_V_SYNC
V.REC_ST_H
SCL
SDA
H.SW
ENV_DET
VCR_A_MUTE
CTL+
CTL-
C.SYNC
BOT
BOT SENSOR Q1017 ST-304L
EOT SENSOR Q1006 ST-304L
D1003 LTE-3271T-012A-O
CENT LED SW Q1002 KRC103SRTK
TAB SW SW1001 LSA-1144EAU
FROM/TO CAPSTAN DD UNIT
CP1001 TMC-J12P-B2
1 CAP_FG
2 CAP_VCO
3 VCC
4 CAP/M/F/R
5 I LIMIT
6 MOTOR_GND
7 GND
8 CYL/LAD_VCC
9 CAP_CTL
10 LDM_CTL
11 CYL_FG/PG
12 CYL_CTL
D1010 SB140-EIC
D1008 SB140-EIC
SYSCON/TIMER/SERVO IC
IC1006
OEC0134A
X1001 100CT0100Q 10MHz
X1002 100DA32R0 32.768KHz
EEP ROM IC IC1099_1 S-24C08AFJA-TB-0
SW Q1004 KRC103SRTK
MS_SEN B Q1003 RPI-352C40N
MS_SEN A Q1009 RPI-352C40N
REEL SENSOR Q1001 RPI-303
REEL SENSOR Q1005 RPI-303
SYSTEM RESET IC IC1003 PST3231NR
D1009 1SS133
D1021 1SS133
D1004 1SS133
D1001 RB721Q-40
VD SW Q1015 KTC3875S_Y_RTK
HD SW Q1016 KTC3875S_Y_RTK
BUFFER Q1007 2SA1037AK
SW Q1010 KRA103SRTK
SERVICE TP1001
B1001 W5RH3.5X5X1.0
B1002 W5RH3.5X5X1.0
TO 21PIN/IN/OUT
EXT_IN_L
TU_AUDIO_MUTE_H
TUNER_ON/OFF
FROM/TO SECAM CHROMA
VV_H
SECAM_SW
SECAM_H
GND
FROM/TO CHROMA IF
PROTECT
SDA
SCL
IIC_OFF
AGC_M
SECAM_VL-H
TO TTEXT/RGB SW
OSD_R
OSD_G
OSD_B
OSD_Y
TO SOUND AMP
TV_A_MUTE
M.P.OFF_H
TV_POWER_H
FROM/TO DEFLECTION
H_CTL
VD
HD
PCB010 VMB250
CAUTION: DIGITAL TRANSISTOR
G-3
G-4

NOTE:THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

NOTE:THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE

POWER SCHEMATIC DIAGRAM

(SYSCON PCB)


FROM TV POWER
CD401
CU251201
CP401B (CP401A)
B2013H02-5P
1 +B
2 +B
3 NC
4 H GND
5 H GND
+B
H_GND
FROM TV POWER
CD851
CU2B1201
CP851B (CP851A)
B2013H02-11P
11 NC
10 POWER_FAIL
9 SOUND+B
8 SOUND_GND
7 UNREG+8V
6 UNREG+8V
5 AT+13V
4 MOTOR_GND
3 MOTOR+12V
2 GND
1 GND
POWER_FAIL[DC]
SOUND+B
SOUND_GND
UNREG+8V
AT+13V
MOTOR_GND
AT+12V
C1048 0.22 F
C2210 1 F
C2211 1 F
⚠ 9V REG IC
IC1007 KIA7809API
IN GND OUT
11.0 0 9.0
8V OUT
Q1012
KTA1281_Y
13.0 11.0
11.0
R1076 10K
R1064 560 1/4W
C1041 16V 470 YK
C1037 10V 470 YK
8V OUT
Q1008
KTA1281_Y
8.0 8.0
UNREG+8V
R1025 10K
D1006 1SS133
R1079 220 1/4W
1.8
P.CON SW
Q1011
KRC103SRTK
5.2
0
W810
⚠ 5V REG. IC
IC1001 KIA7805API
IN GND OUT
8.5 0 5.0
R1016 220 1/4W
R1036 22 1/4W
C1029 6.3V 470 YK
C1042 16V 470 YK
AT+5.6V
⚠ 5V REG. IC
IC1006 KIA7805API
IN GND OUT
8.0 0 5.0
R1038 1K 1/2W
R1052 12 1/2W
C1059 6.3V 470 YK
⚠ 5V REG. IC
IC1004 KIA7805API
IN GND OUT
8.0 0 5.0
R1047 470 1/4W
R1060 12 1/4W
C1036 6.3V 470 YK
P.CON+9V
D1002 11E1-EIC
P.CON+8V
P.CON+5V
HS1003 763WAAA034
HS1001 763WAAA034
HS1002 763WSA0019
GND
STANDBY_H
T-REC_LED
REC_LED
AT+5V
STAND BY D2201 SLR-342VCT32
T-REC D2202 SLR-342VCT32
REC/OTR D2203 SLR-342VCT32
R2227 270 1/4W
R2205 270
R2207 270
OS2201
PIC-37243SR
GND ③ 0
B+ ② 5.1
Vout ① 5.2
R2216 100 1/4W
REMOCON_IN
C2202 100B
C2207 6.3V 220 YK
R2208 5.6K
R2209 2.7K
R2210 1.5K
R2211 1K
R2213 820
R2215 820
REW/REV SW2201 EVQ21505R
FF/CUE SW2202 EVQ21505R
PLAY SW2203 EVQ21505R
STOP/EJECT SW2204 EVQ21505R
REC/OTR SW2205 EVQ21505R
POWER ON/OFF SW2209 EVQ21505R
C2204 0.001 B
KEY_A
KEY_B
R2212 1.5K
R2214 1K
VOL DOWN SW2206 EVQ21505R
VOL UP SW2207 EVQ21505R
CH UP SW2208 EVQ21505R
CH DOWN SW2210 EVQ21505R
C2203 0.001 B
C2208
470P B
WHITE
FRONT AUDIO JACK
J2202
AV1-09D-4
R2226 75
YELLOW
FRONT VIDEO JACK
J2203
AV1-09D-3
HEADPHONE_JACK
J2201
MSJ-2000
NC
C2212 0.01 B
C2213 0.01 B
B2201 W5RH3.5X5X1.0
C2201 16V47 KA
R2204 56 1/4W
R2206 56 1/4W
W811
B2202 W5RH3 5X5X1.0
B2203 W5RH3.5X5X1.0
L1002 10uH
SP_OUT
SOUND+
SOUND_GND
FRONT_V_IN
FRONT_A_IN_L
TO DEFLECTION
+B
H_GND
GND
AT+13V
TO Y/C/AUDIO/HEAD AMP
P.CON+9V
P.CON+5V_A
FRONT_V_IN
FRONT_A_IN_L
GND
FROM/TO MICON
VCR_POWER_H
POWER_FAIL[DC]
P.CON+5V_A
AT+12V
P.CON+5V
MOTOR_GND
GND
AT+5.6V
AT+5V
T-REC_LED
REC_LED
REMOCON_IN
KEY_A
KEY_B
STANDBY_H
TO CHROMA/IF
P.CON+8V
+B
P.CON+5V
GND
P.CON+9V
TO 21PIN/IN/OUT
P.CON+8V
GND
TO SECAM CHROMA
P.CON+5V_A
GND
FROM/TO SOUND AMP
GND
SOUND+B
SOUND+
SOUND_GND
SP_OUT
PCB010
VMB290

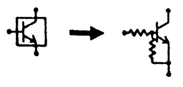
ATTENTION LES PIECES REPAREES PAR ⚠ ETANT
DANGEREUSES AN POINT DE VUE SECURITE
N'UTILISER QUE CELLS DECRITES
DANS LA NOMENCLATURE DES PIECES

CAUTION: SINCE THESE PARTS MARKED ⚠ ARE
CRITICAL FOR SAFETY,USE ONES
DESCRIBED IN PARTS LIST ONLY

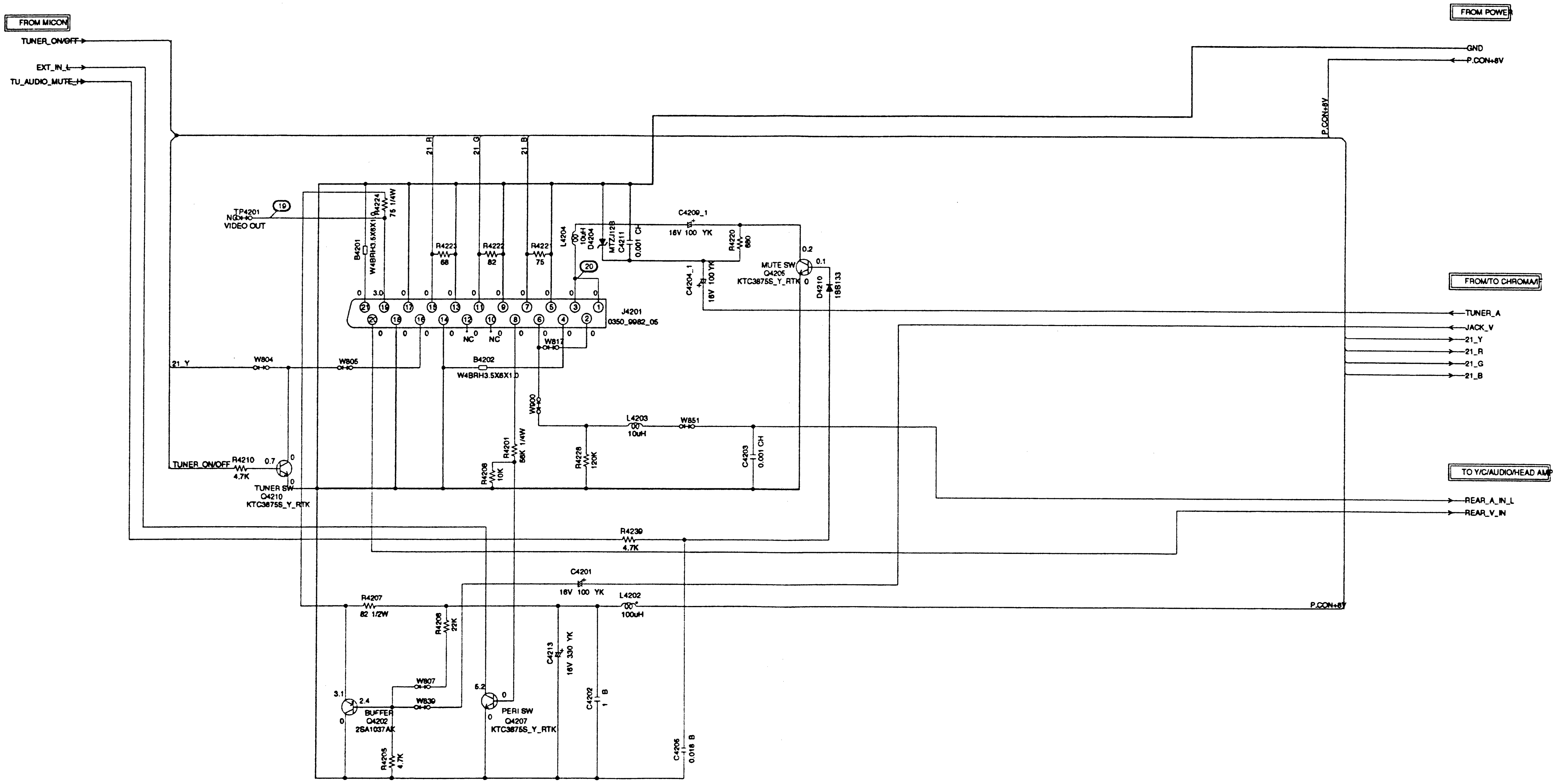
NOTE:THE DC VOLTAGE EACH PART WAS
MEASURED WITH THE DIGITAL TESTER
DURING PLAYBACK.

NOTE:THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME
OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE

CAUTION: DIGITAL TRANSISTOR



21PIN/IN/OUT SCHEMATIC DIAGRAM
(SYSCON PCB)



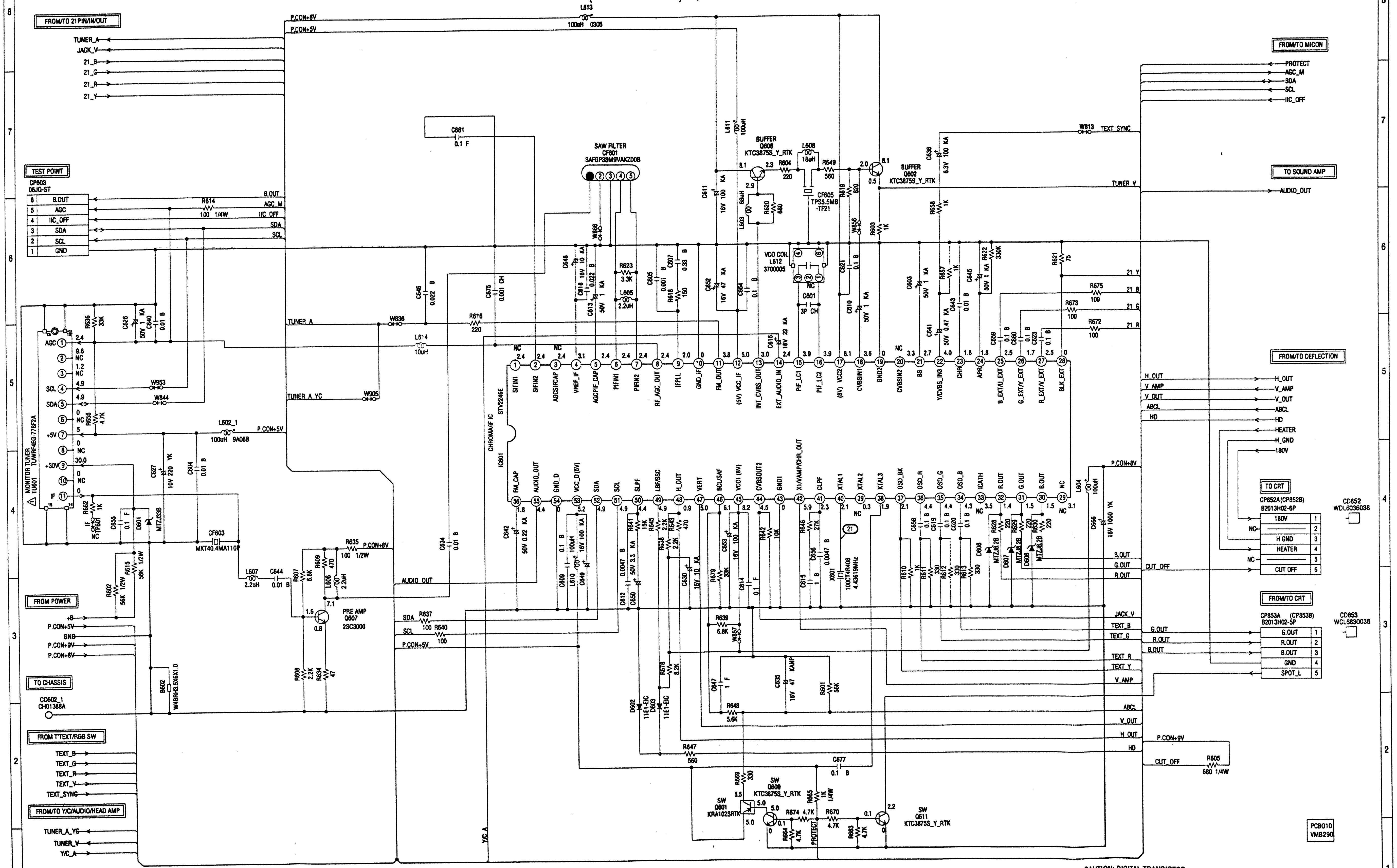
FROM MICON
TUNER_ON/OFF
EXT_IN_L
TU_AUDIO_MUTE_H
FROM POWER
GND
P.CON+8V
FROM/TO CHROMA/IF
TUNER_A
JACK_V
21_Y
21_R
21_G
21_B
TO Y/C/AUDIO/HEAD AMP
REAR_A_IN_L
REAR_V_IN
TP4201
NC
VIDEO OUT
19
20
B4201
W4BRH3.5X6X1.0
R4224
75 1/4W
R4223
68
R4222
82
R4221
75
L4204
10uH
D4204
MTZJ12B
C4211
0.001 CH
C4209_1
16V 100 YK
R4220
680
MUTE SW
Q4205
KTC3875S_Y_RTK
D4210
1SS133
C4204_1
16V 100 YK
J4201
0350_9982_05
NC
W817
B4202
W4BRH3.5X6X1.0
21_Y
W804
W805
W800
L4203
10uH
W851
C4203
0.001 CH
R4228
120K
R4201
56K 1/4W
R4208
10K
TUNER ON/OFF
R4210
4.7K
TUNER SW
Q4210
KTC3875S_Y_RTK
R4239
4.7K
C4201
16V 100 YK
L4202
100uH
R4207
82 1/2W
R4206
22K
C4213
16V 330 YK
C4202
1 B
C4206
0.018 B
W807
W839
BUFFER
Q4202
2SA1037AK
R4205
4.7K
PERI SW
Q4207
KTC3875S_Y_RTK
21_R
21_G
21_B
P.CON+8V
PCB010
VMB290

NOTE:THE DC VOLTAGE EACH PART WAS
MEASURED WITH THE DIGITAL TESTER
DURING PLAYBACK.

NOTE:THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME
OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE

CHROMA/IF SCHEMATIC DIAGRAM

(SYSCON PCB) (COMBI 3602 SI)


FROM/TO 21PIN/IN/OUT
TUNER_A
JACK_V
21_B
21_G
21_R
21_Y
P.CON+8V
P.CON+5V
L613
100uH 0305
TEST POINT
CP603
06JQ-ST
6 B.OUT
5 AGC
4 IIC_OFF
3 SDA
2 SCL
1 GND
R614
100 1/4W
B.OUT
AGC_M
IIC_OFF
SDA
SCL
C681
0.1 F
SAW FILTER
CF601
SAFGP38M9VAKZ00B
L611
100uH
BUFFER
Q608
KTC3875S_Y_RTK
L608
18uH
R604
220
R649
560
R620
680
L603
68uH
CF605
TPS5.5MB
-TF21
VCO COIL
L612
3700005
C601
3P CH
BUFFER
Q602
KTC3875S_Y_RTK
W813
TEXT_SYNC
TUNER_V
FROM/TO MICON
PROTECT
AGC_M
SDA
SCL
IIC_OFF
TO SOUND AMP
AUDIO_OUT
FROM/TO DEFLECTION
H_OUT
V_AMP
V_OUT
ABCL
HD
HEATER
H_GND
180V
MONITOR TUNER
TU601
TUWRF4EG-778F2A
AGC
NC
SCL
SDA
+5V
+30V
IF
R636
33K
C626
50V 1 KA
C640
0.01 B
TUNER_A
W836
R616
220
L614
10uH
W953
W844
TUNER_A_YC
W905
L602_1
100uH 9A068
P.CON+5V
C627
10V 220 YK
C604
0.01 B
CF603
MKT40.4MA110P
R635
100 1/2W
P.CON+8V
R609
470
L606
2.2uH
L607
2.2uH
C644
0.01 B
R607
6.8K
PRE AMP
Q607
2SC3000
AUDIO_OUT
C634
0.01 B
C646
0.022 B
C675
0.001 CH
FROM POWER
+B
P.CON+5V
GND
P.CON+9V
P.CON+8V
R602
56K 1/2W
R615
56K 1/2W
D601
MTZJ33B
C655
0.1 F
R662
1K
TO CHASSIS
CD602_1
CH01388A
B602
W4BRH3.5X6X1.0
R608
2.2K
R634
47
FROM T'TEXT/RGB SW
TEXT_B
TEXT_G
TEXT_R
TEXT_Y
TEXT_SYNC
FROM/TO Y/C/AUDIO/HEAD AMP
TUNER_A_YC
TUNER_V
Y/C_A
SDA R637 100
SCL R640 100
P.CON+5V
CHROMA/IF IC
IC601
STV2246E
SIFIN1
SIFIN2
AGCSIFCAP
VREF_IF
AGCPIF_CAP
PIFIN1
PIFIN2
RF_AGC_OUT
IFPLL
GND_IF
FM_OUT
(5V) VCC_IF
INT_CVBS_OUT
EXT_AUDIO_IN
PIF_LC1
PIF_LC2
(8V) VCC2
CVBSIN1
GND2
CVBSIN2
BS
Y/CVBS_IN3
CHR
APR
B_EXT/I_EXT
G_EXT/Y_EXT
R_EXT/V_EXT
BLK_EXT
FM_CAP
AUDIO_OUT
GND_D
VCC_D (5V)
SDA
SCL
SLPF
LBF/SSC
H_OUT
VERT
BCL/SAF
VCC1 (8V)
CVBSOUT2
GND1
X1/VAMP/CHR_OUT
CLPF
XTAL1
XTAL2
XTAL3
OSD_BK
OSD_R
OSD_G
OSD_B
ICATH
R.OUT
G.OUT
B.OUT
NC
W856
W858
C648 16V 10 KA
C616 0.022 B
C613 50V 1 KA
R623 3.3K
L605 2.2uH
C605 0.001 B
C607 0.33 B
R618 150
C652 16V 47 KA
C654 0.1 B
C615 16V 22 KA
C621 0.1 B
C610 50V 1 KA
R619 820
R603 1K
R658 1K
C636 6.3V 100 KA
C603 50V 1 KA
R657 1K
C643 0.01 B
C641 50V 0.47 KA
C645 50V 1 KA
R622 330K
C659 0.1 B
C660 0.1 B
C623 0.1 B
R621 75
R675 100
R673 100
R672 100
21_Y
21_B
21_G
21_R
L604 100uH
C656 16V 1000 YK
P.CON+8V
C642 50V 0.22 KA
C609 0.1 B
L610 100uH
C649 16V 100 KA
C612 0.0047 B
C650 50V 3.3 KA
R641 15K
R645 2.2K
R638 2.2K
R643 470
C630 16V 10 KA
R639 33K
C653 16V 100 KA
C614 0.1 F
R642 10K
C615 0.1 B
R646 27K
C656 0.0047 B
X601 100CT48408 4.43619MHz
C658 0.1 B
C619 0.1 B
C620 0.1 B
C618 0.1 B
R610 1K
R611 330
R612 330
R613 330
D606 MTZJ8.2B
D607 MTZJ8.2B
D608 MTZJ8.2B
R628 220
R629 220
R630 220
B.OUT
G.OUT
R.OUT
CUT_OFF
R639 6.8K
W857
JACK_V
TEXT_B
TEXT_G
TEXT_R
TEXT_Y
V_AMP
ABCL
V_OUT
H_OUT
HD
D602 11E1-EIC
D603 11E1-EIC
R678 8.2K
C647 1 F
C635 16V 47 KANP
R601 56K
R648 5.6K
R647 560
C677 0.1 B
R669 330
SW Q609 KTC3875S_Y_RTK
R665 1K 1/4W
SW Q601 KRA102SRTK
R674 4.7K
R670 4.7K
R664 4.7K
PROTECT
R663 4.7K
SW Q611 KTC3875S_Y_RTK
P.CON+9V
CUT_OFF
R605 680 1/4W
TO CRT
CP852A (CP852B)
B2013H02-6P
CD852
WDL6036038
1 180V
2
3 H GND
4 HEATER
5
6 CUT OFF
NC
FROM/TO CRT
CP853A (CP853B)
B2013H02-5P
CD853
WCL6830038
1 G.OUT
2 R.OUT
3 B.OUT
4 GND
5 SPOT_L
G.OUT
R.OUT
B.OUT
PCB010
VMB290

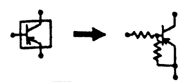
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

NOTE: THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

CAUTION SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY.

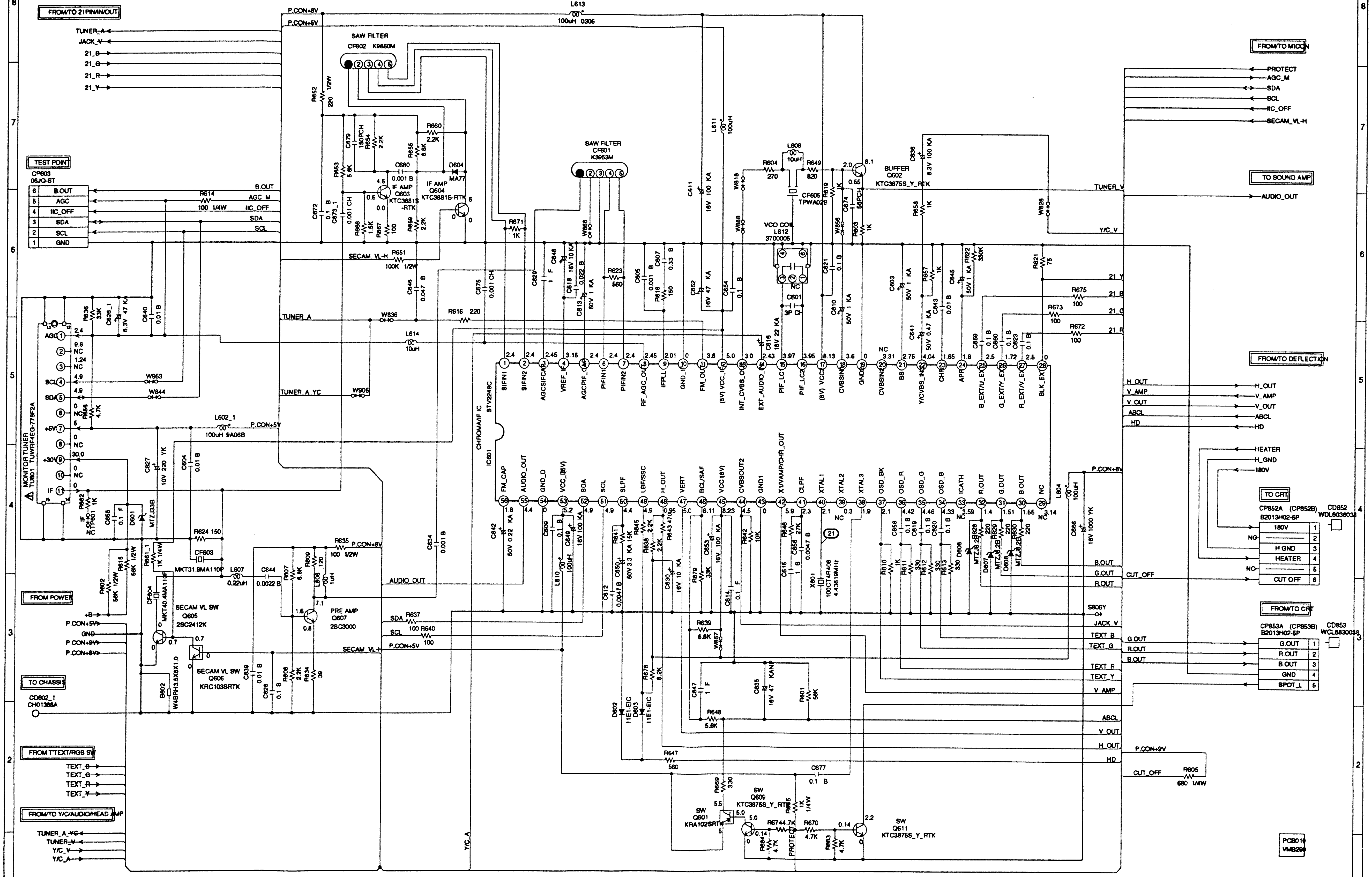
ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES.

CAUTION: DIGITAL TRANSISTOR



CHROMA/IF SCHEMATIC DIAGRAM

(SYSCON PCB)


FROM/TO 21PIN/IN/OUT
TUNER_A
JACK_V
21_B
21_G
21_R
21_Y
P.CON+8V
P.CON+5V
L613 100uH 0305
SAW FILTER CF602 K9650M
SAW FILTER CF601 K3953M
TEST POINT
CP603 06JQ-ST
6 B.OUT
5 AGC
4 IIC_OFF
3 SDA
2 SCL
1 GND
R614 100 1/4W
AGC_M
IIC_OFF
SDA
SCL
IF AMP Q603 KTC3881S-RTK
IF AMP Q604 KTC3881S-RTK
D604 MA77
R660 2.2K
R652 220 1/2W
SECAM_VL-H
R651 100K 1/2W
TUNER_A
W836
R616 220
L614 10uH
R671 1K
L611 100uH
L608 10uH
R604 270
R649 820
CF605 TPWA02B
VCO COIL L612 3700005
BUFFER Q602 KTC3875S_Y_RTK
C636 6.3V 100 KA
TUNER_V
Y/C_V
W826
MONITOR TUNER TU601 TUWRF4EG-778F2A
AGC 1
2 NC
3 NC
SCL 4
SDA 5
6
+5V 7
8 NC
+30V 9
10 NC
IF 11
W953
W844
TUNER_A_YC
W905
L602_1 100uH 9A06B
P.CON+5V
CHROMA/IF IC IC601 STV2248C
SIFIN1
SIFIN2
AGCSIFCAP
VREF_IF
AGCPIF_CAP
PIFIN1
PIFIN2
RF_AGC_OUT
IFPLL
GND_IF
FM_OUT
(5V) VCC_IF
INT_CVBS_OUT
EXT_AUDIO_IN
PIF_LC1
PIF_LC2
(8V) VCC
CVBSIN1
GND
CVBSIN2
BS
Y/CVBS_IN3
CHROMA
APR
B_EXT/U_EXT
G_EXT/Y_EXT
R_EXT/V_EXT
BLK_EXT
FM_CAP
AUDIO_OUT
GND_D
VCC (5V)
SDA
SCL
SLPF
LBF/SSC
H_OUT
VERT
BCL/SAF
VCC (8V)
CVBSOUT2
GND1
X1/VAMP/CHR_OUT
CLPF
XTAL1
XTAL2
XTAL3
OSD_BK
OSD_R
OSD_G
OSD_B
ICATH
R.OUT
G.OUT
B.OUT
NC
X601 4.43619MHz
R624 150
CF603 MKT31.9MA110P
L607 0.22uH
C644 0.0022 B
R635 100 1/2W
P.CON+8V
PRE AMP Q607 2SC3000
SECAM VL SW Q605 2SC2412K
SECAM VL SW Q606 KRC103SRTK
CF604 MKT40.4MA110P
B602 W4BRH3.5X6X1.0
AUDIO_OUT
SDA R637 100
SCL R640 100
SECAM_VL
P.CON+5V
FROM POWER
+B
P.CON+5V
GND
P.CON+9V
P.CON+8V
TO CHASSIS
CD602_1 CH01368A
FROM T'TEXT/RGB SW
TEXT_B
TEXT_G
TEXT_R
TEXT_Y
FROM/TO Y/C/AUDIO/HEAD AMP
TUNER_A_Y/C
TUNER_V
Y/C_V
Y/C_A
R639 6.8K
W857
R648 5.6K
R647 560
C677 0.1 B
D602 11E1-EIC
D603 11E1-EIC
SW Q601 KRA102SRTK
SW Q609 KTC3875S_Y_RTK
SW Q611 KTC3875S_Y_RTK
R674 4.7K
R670 4.7K
PROTECT
FROM/TO MICON
PROTECT
AGC_M
SDA
SCL
IIC_OFF
SECAM_VL-H
TO SOUND AMP
AUDIO_OUT
FROM/TO DEFLECTION
H_OUT
V_AMP
V_OUT
ABCL
HD
HEATER
H_GND
180V
TO CRT
CP852A (CP852B) B2013H02-6P
CD852 WDL6036036
1 180V
2
3 H GND
4 HEATER
5
6 CUT OFF
B.OUT
G.OUT
R.OUT
CUT_OFF
S806Y
JACK_V
TEXT_B
TEXT_G
TEXT_R
TEXT_Y
V_AMP
ABCL
V_OUT
H_OUT
HD
P.CON+9V
CUT_OFF
R605 680 1/4W
FROM/TO CRT
CP853A (CP853B) B2013H02-5P
CD853 WCL6830036
1 G.OUT
2 R.OUT
3 B.OUT
4 GND
5 SPOT_L
G.OUT
R.OUT
B.OUT
R675 100
R673 100
R672 100
R621 75
P.CON+8V
L604 100uH
C666 16V 1000 YK
PCB010 VMB290

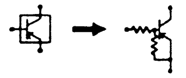
NOTE:THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE

NOTE:THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

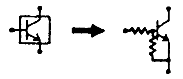
CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY

ATTENTION: LES PIECES REPAREES PAR ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES

CAUTION: DIGITAL TRANSISTOR

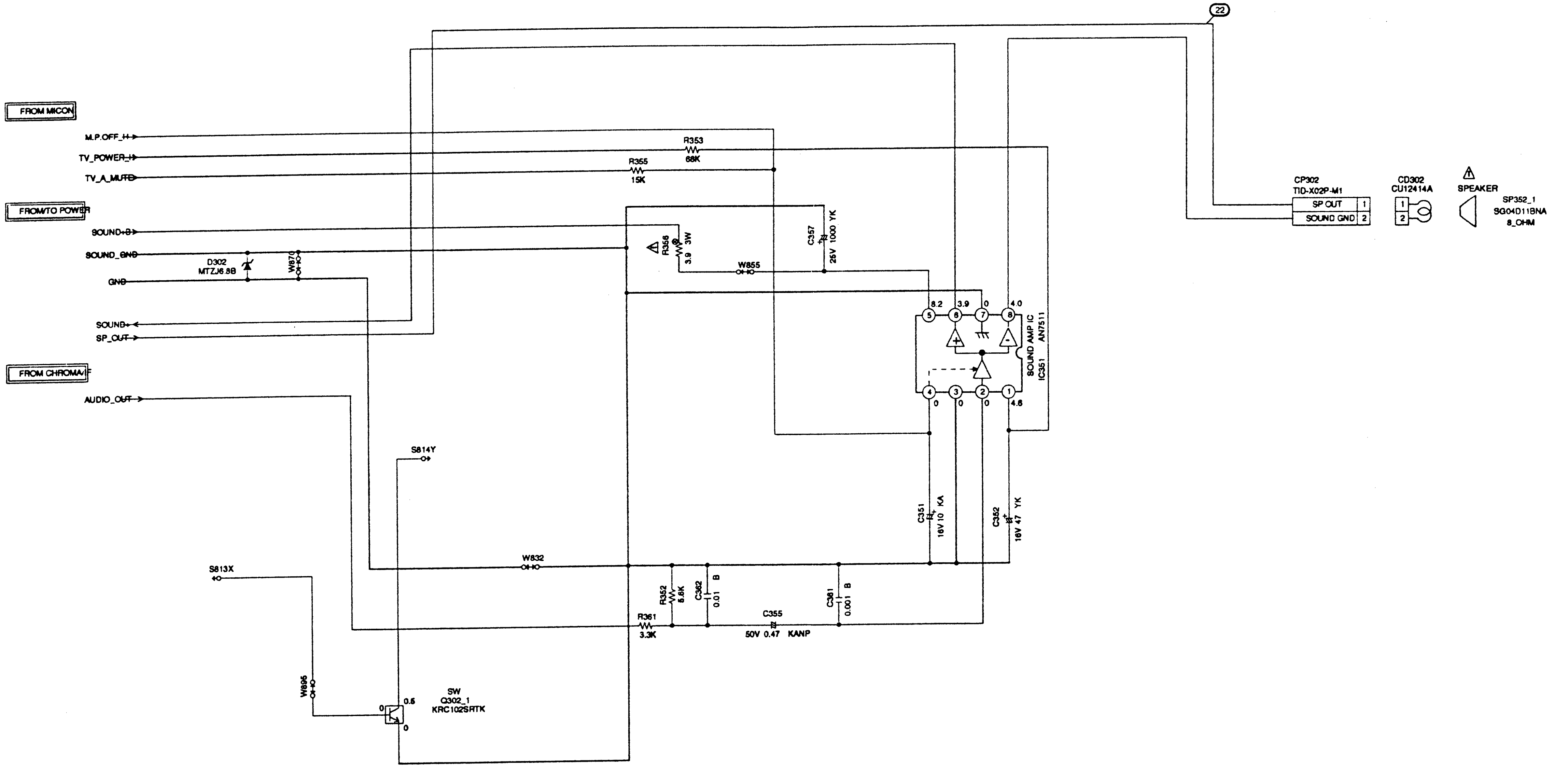


CAUTION: DIGITAL TRANSISTOR



SOUND AMP SCHEMATIC DIAGRAM

(SYSCON PCB)


22
FROM MICON
M.P.OFF_H
TV_POWER_H
TV_A_MUTE
R353
68K
R355
15K
FROM/TO POWER
SOUND+B
SOUND_GND
GND
D302
MTZJ6.8B
W870
R356
3.9 3W
C357
25V 1000 YK
W855
SOUND+
SP_OUT
FROM CHROMA/IF
AUDIO_OUT
8.2
3.9
0
4.0
5
6
7
8
4
3
2
1
0
0
0
4.6
SOUND AMP IC
IC351 AN7511
C351
16V 10 KA
C352
16V 47 YK
S814Y
S813X
W832
R352
5.6K
C362
0.01 B
C361
0.001 B
R361
3.3K
C355
50V 0.47 KANP
W895
SW
Q302_1
KRC102SRTK
0.5
0
0
CP302
TID-X02P-M1
SP OUT 1
SOUND GND 2
CD302
CU12414A
1
2
SPEAKER
SP352_1
SG04D11BNA
8_OHM

PCB010
VMB290

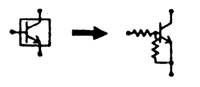
ATTENTION LES PIECES REPAREES PAR ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES

CAUTION SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY

NOTE THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE

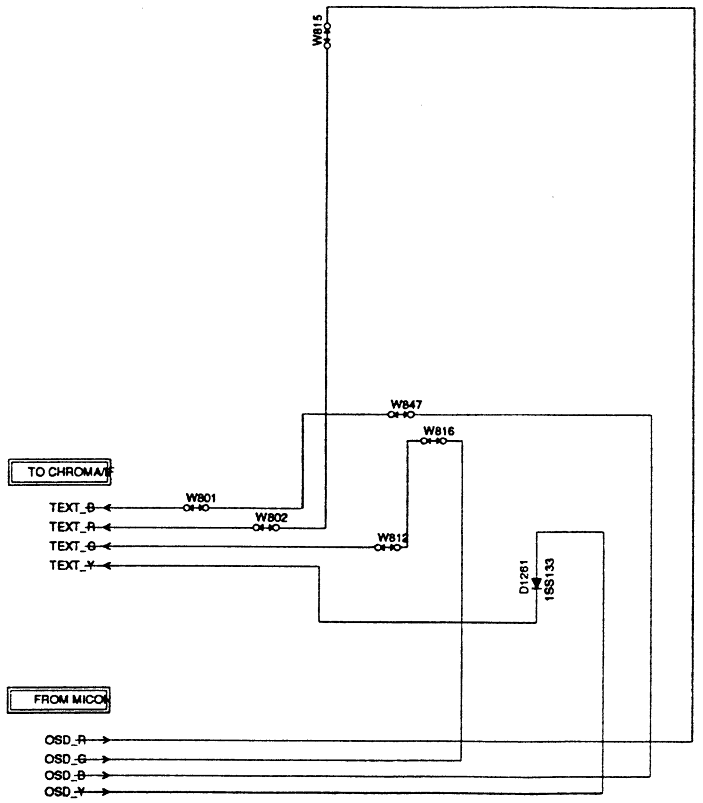
NOTE:THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

CAUTION: DIGITAL TRANSISTOR



T'TEXT/RGB SW SCHEMATIC DIAGRAM

(SYSCON PCB)


W815
W847
W816
TO CHROMA/
W801
TEXT_B
W802
TEXT_R
W812
TEXT_G
TEXT_Y
D1261
1SS133
FROM MICO
OSD_R
OSD_G
OSD_B
OSD_Y

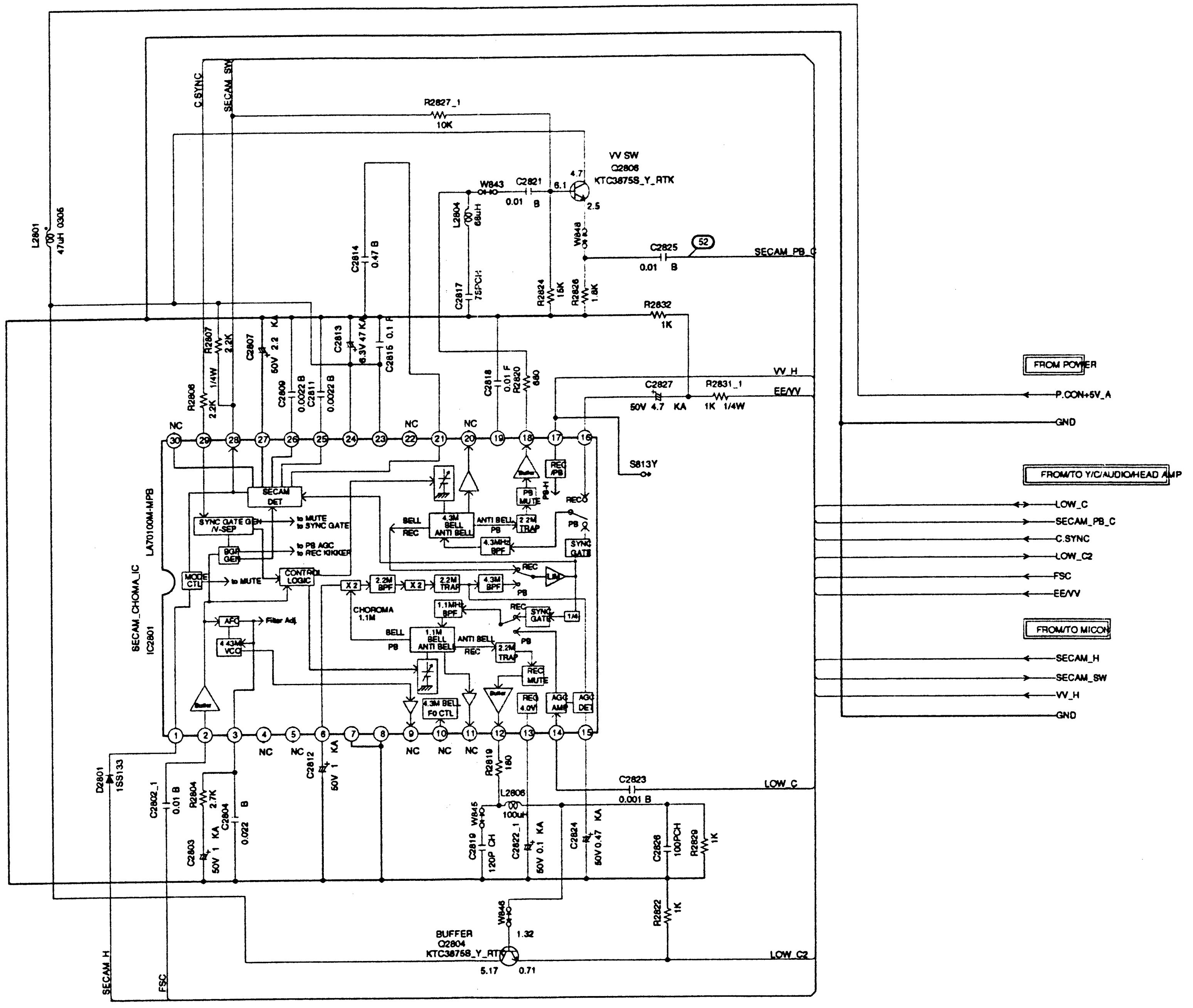
NOTE:THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME
OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE

NOTE:THE DC VOLTAGE EACH PART WAS
MEASURED WITH THE DIGITAL TESTER
DURING PLAYBACK.

PCB01
VMB29

SECAM CHROMA SCHEMATIC DIAGRAM

(SYSCON PCB)

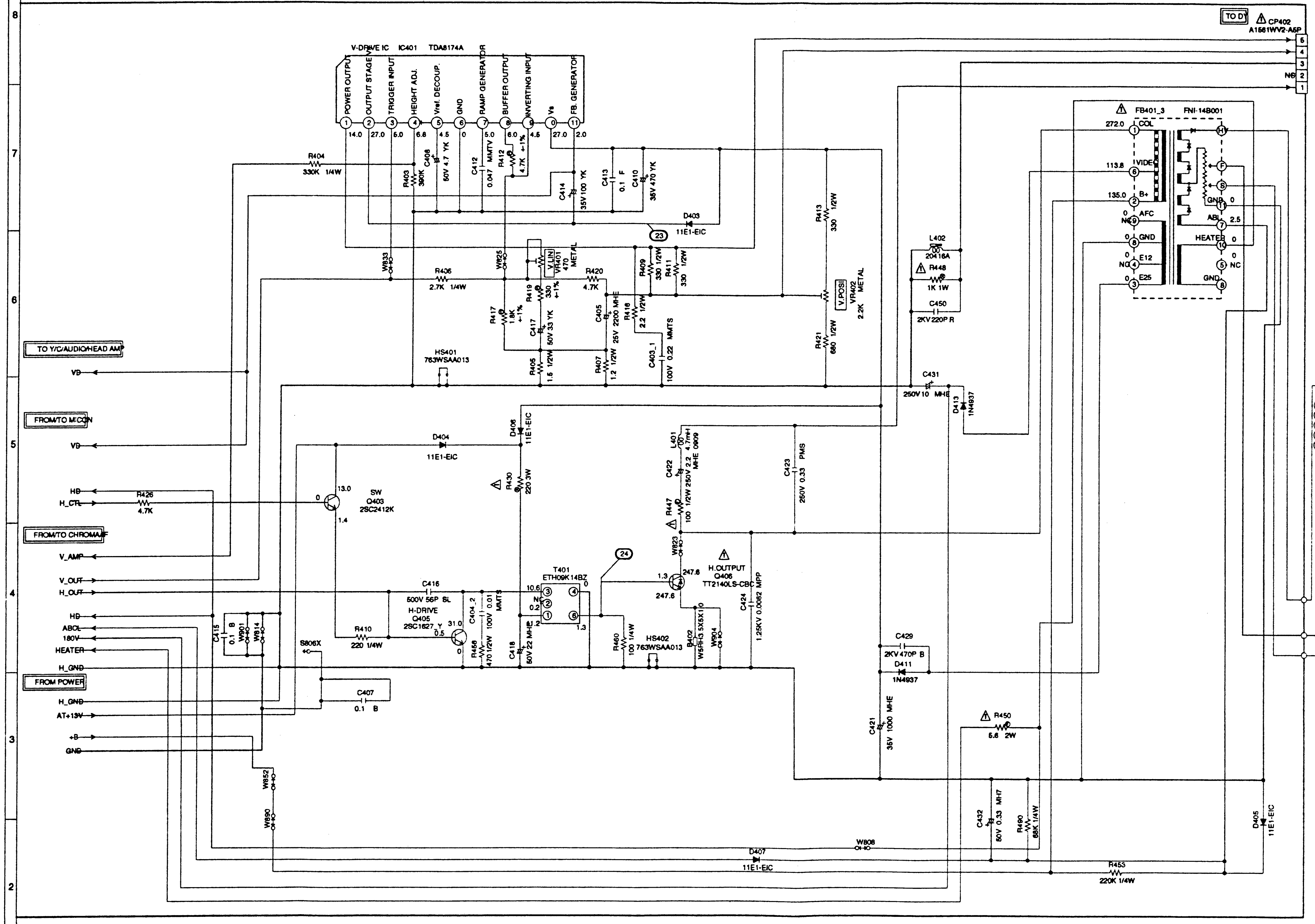

C.SYNC
SECAM_SW
R2827_1
10K
VV SW
Q2806
KTC3875S_Y_RTK
4.7
6.1
2.5
W843
C2821
0.01 B
L2804
68uH
W848
C2825
0.01 B
52
SECAM_PB_C
L2801
47uH 0305
C2814
0.47 B
C2817
75PCH
R2824
15K
R2826
1.8K
R2832
1K
R2807
2.2K
R2808
2.2K 1/4W
C2807
50V 2.2 KA
C2813
6.3V 47 KA
C2815 0.1 F
C2809
0.0022 B
C2811
0.0022 B
C2818
0.01 F
R2820
680
C2827
50V 4.7 KA
R2831_1
1K 1/4W
VV_H
EE/VV
S813Y
NC
SECAM DET
SYNC GATE GEN /V-SEP
to MUTE
to SYNC GATE
BGP GEN
to PB AGC
to REC KIKKER
MODE CTL
to MUTE
CONTROL LOGIC
AFC
Filter Adj
4.43M VCO
Buffer
X 2
2.2M BPF
2.2M TRAP
4.3M BPF
CHOROMA 1.1M
1.1MHz BPF
1.1M BELL ANTI BELL
BELL
PB
ANTI BELL
REC
2.2M TRAP
REC MUTE
4.3M BELL F0 CTL
REG 4.0V
AGC AMP
AGC DET
SYNC GATE
1/4
LIM
4.3M BELL ANTI BELL
4.3MHz BPF
PB MUTE
REC /PB
PB-H
RECO
SECAM_CHOMA_IC
IC2801
LA70100M-MPB
D2801
1SS133
C2802_1
0.01 B
R2804
2.7K
C2803
50V 1 KA
C2804
0.022 B
C2812
50V 1 KA
R2819
180
L2806
100uH
W845
C2819
120P CH
C2822_1
50V 0.1 KA
C2824
50V 0.47 KA
C2823
0.001 B
LOW_C
C2826
100PCH
R2829
1K
R2822
1K
W846
BUFFER
Q2804
KTC3875S_Y_RTK
1.32
5.17
0.71
LOW_C2
SECAM_H
FSC
FROM POWER
P.CON+5V_A
GND
FROM/TO Y/C/AUDIO/HEAD AMP
LOW_C
SECAM_PB_C
C.SYNC
LOW_C2
FSC
EE/VV
FROM/TO MICON
SECAM_H
SECAM_SW
VV_H
GND

PCB010
VMB290

NOTE:THE DC VOLTAGE EACH PART WAS
MEASURED WITH THE DIGITAL TESTER
DURING PLAYBACK.

NOTE:THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME
OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE

DEFLECTION SCHEMATIC DIAGRAM (S18CON PCB)


V-DRIVE IC IC401 TDA8174A
POWER OUTPUT
OUTPUT STAGE V
TRIGGER INPUT
HEIGHT ADJ.
Vref. DECOUP.
GND
RAMP GENERATOR
BUFFER OUTPUT
INVERTING INPUT
Vs
FB. GENERATOR
14.0
27.0
5.0
6.8
4.5
0
5.0
6.0
4.5
27.0
2.0
R404 330K 1/4W
R403 390K
C408 50V 4.7 YK
C412 0.047 MMTV
R412 4.7K +-1%
C414 35V 100 YK
C413 0.1 F
C410 35V 470 YK
D403 11E1-EIC
23
W833
W825
R406 2.7K 1/4W
V.LIN VR401 470 METAL
R420 4.7K
R409 330 1/2W
R411 330 1/2W
R419 330 +-1%
R417 1.8K +-1%
C417 50V 33 YK
C405 25V 2200 MHE
R418 2.2 1/2W
C403_1 100V 0.22 MMTS
R405 1.5 1/2W
R407 1.2 1/2W
HS401 763WSAA013
R413 330 1/2W
V.POSI VR402 2.2K METAL
R421 680 1/2W
TO Y/C/AUDIO/HEAD AMP
VD
FROM/TO MICON
VD
HD
H_CTL
R426 4.7K
FROM/TO CHROMA/IF
V_AMP
V_OUT
H_OUT
HD
ABCL
180V
HEATER
H_GND
FROM POWER
H_GND
AT+13V
+B
GND
D404 11E1-EIC
D406 11E1-EIC
R430 220 3W
13.0
0
1.4
SW Q403 2SC2412K
C416 500V 56P SL
H-DRIVE Q405 2SC1627_Y
31.0
0.5
0
R410 220 1/4W
C404_2 100V 0.01 MMTS
R456 470 1/2W
C418 50V 22 MHE
C415 0.1 B
W901
W814
S806X
C407 0.1 B
W852
W890
T401 ETH09K14BZ
10.6
NC
0.2
1.2
1.3
24
H.OUTPUT Q406 TT2140LS-CBC
1.3
247.6
247.6
R460 100 1/4W
HS402 763WSAA013
B402 W5RH3.5X5X10
W904
W823
R447 100 1/2W
L401 4.7mH
C422 250V 2.2 MHE 0909
C423 250V 0.33 PMS
C424 1.25KV 0.0082 MPP
TO DY
CP402 A1561WV2-A5P
5
4
3
NC 2
1
FB401_3 FNI-14B001
272.0 COL
113.8 VIDEO
135.0 B+
0 AFC NC
0 GND
0 E12 NC
0 E25
H
F
S
GND 0
ABL 2.5
HEATER 0
0 NC
GND
L402 20416A
R448 1K 1W
C450 2KV 220P R
C431 250V 10 MHE
D413 1N4937
V801 A34JXV70X53N45
R
G
B
CD801 SM1098-009-1A (CP801)
TO CRT
FOCUS
SCREEN
C429 2KV 470P B
D411 1N4937
C421 35V 1000 MHE
R450 5.6 2W
C432 50V 0.33 MH7
R490 68K 1/4W
D405 11E1-EIC
D407 11E1-EIC
W808
R453 220K 1/4W

PCB010
VMB290

NOTE:THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE

NOTE:THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

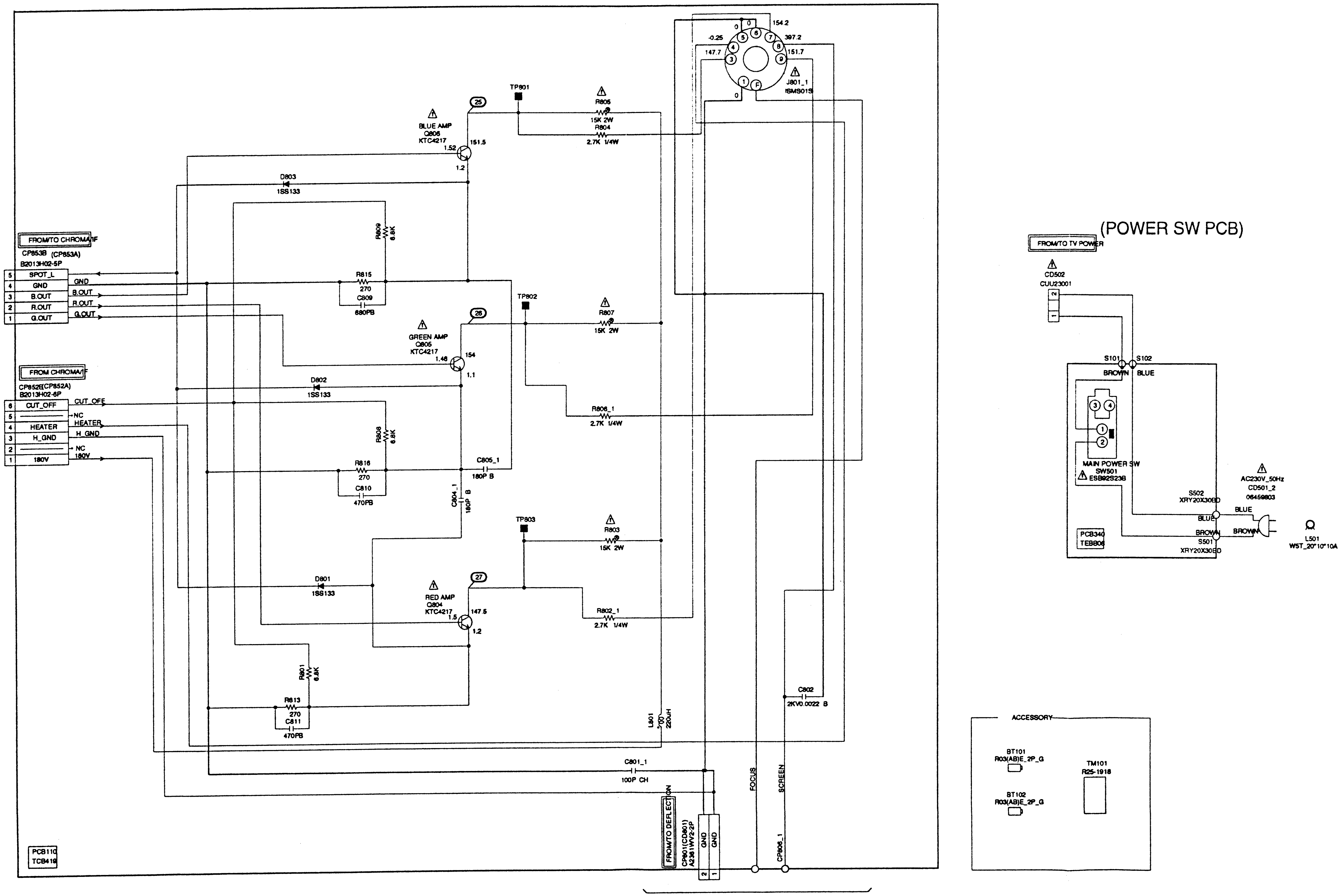
NOTE:THE RESISTOR MARKED F IS FUSE RESISTOR.
THE ALUMI ELECTROLYTIC CAPACITOR MARKED NP IS NON POLAR ONE.

CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY

ATTENTION: LES PIECES REPAREES PAR ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES

CRT SCHEMATIC DIAGRAM

(CRT PCB)


FROM/TO CHROMA/IF
CP853B (CP853A)
B2013H02-5P
5 SPOT_L
4 GND
3 B.OUT
2 R.OUT
1 G.OUT
GND
B.OUT
R.OUT
G.OUT
FROM CHROMA/IF
CP852B(CP852A)
B2013H02-6P
6 CUT_OFF
5
4 HEATER
3 H_GND
2
1 180V
CUT_OFF
NC
HEATER
H_GND
NC
180V
BLUE AMP
Q806
KTC4217
1.52
151.5
1.2
25
TP801
R805
15K 2W
R804
2.7K 1/4W
D803
1SS133
R809
6.8K
R815
270
C809
680PB
TP802
R807
15K 2W
26
GREEN AMP
Q805
KTC4217
1.46
154
1.1
D802
1SS133
R806_1
2.7K 1/4W
R808
6.8K
R816
270
C810
470PB
C805_1
180P B
C804_1
180P B
TP803
R803
15K 2W
D801
1SS133
27
RED AMP
Q804
KTC4217
1.5
147.5
1.2
R802_1
2.7K 1/4W
R801
6.8K
R813
270
C811
470PB
L801
220uH
C802
2KV0.0022 B
C801_1
100P CH
FROM/TO DEFLECTION
CP801(CD801)
A2361WV2-2P
GND
GND
2
1
FOCUS
SCREEN
CP806_1
PCB110
TCB419
0
0
154.2
-0.25
397.2
147.7
151.7
0
5
6
7
4
8
3
9
1
F
J801_1
ISMS01S
(POWER SW PCB)
FROM/TO TV POWER
CD502
CUU23001
2
1
S101
S102
BROWN
BLUE
3
4
1
2
MAIN POWER SW
SW501
ESB92S238
AC230V_50Hz
CD501_2
06459803
S502
XRY20X30BD
BLUE
BLUE
BROWN
BROWN
S501
XRY20X30BD
PCB340
TEB806
L501
W5T_20*10*10A
ACCESSORY
BT101
R03(AB)E_2P_G
BT102
R03(AB)E_2P_G
TM101
R25-1918

NOTE:THE DC VOLTAGE AT EACH PART WAS MEASURED
WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST
WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

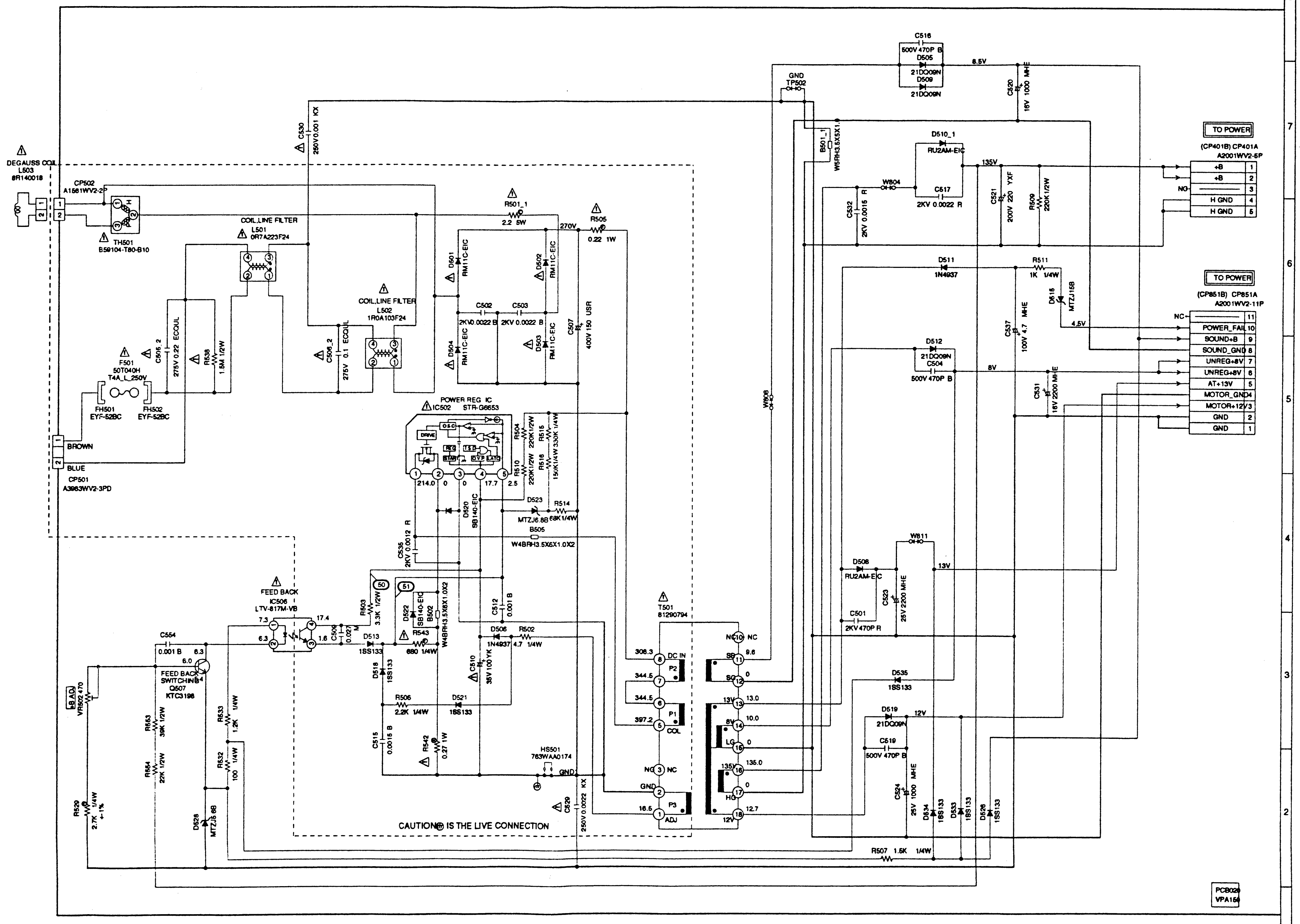
NOTE:THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME
OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE

CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE
CRITICAL FOR SAFETY,USE ONES
DESCRIBED IN PARTS LIST ONLY

ATTENTION: LES PIECES REPAREES PAR ⚠ ETANT
DANGEREUSES AN POINT DE VUE SECURITE
N'UTILISER QUE CELLS DECRITES
DANS LA NOMENCLATURE DES PIECES

TV POWER SCHEMATIC DIAGRAM

(POWER PCB)



DEGAUSS COIL L503 8R140018
CP502 A1561WV2-2P
TH501 B59104-T80-B10
COIL,LINE FILTER L501 0R7A223F24
COIL,LINE FILTER L502 1R0A103F24
F501 50T040H T4A_L_250V
FH501 EYF-52BC
FH502 EYF-52BC
C506_2 275V 0.22 ECQUL
R538 1.5M 1/2W
C505_2 275V 0.1 ECQUL
C530 250V 0.001 KX
CP501 A3983WV2-3PD
BROWN
BLUE
R501_1 2.2 5W
R505 0.22 1W
270V
D501 RM11C-EIC
D502 RM11C-EIC
D503 RM11C-EIC
D504 RM11C-EIC
C502 2KV 0.0022 B
C503 2KV 0.0022 B
C507 400V 150 USR
POWER REG IC IC502 STR-G6653
DRIVE
OSC
REG
R504 220K 1/2W
R510 220K 1/2W
R515 330K 1/4W
R516 150K 1/4W
D520 SB140-EIC
D523 MTZJ6.8B
R514 68K 1/4W
B505 W4BRH3.5X6X1.0X2
C535 2KV 0.0012 R
FEED BACK IC506 LTV-817M-VB
C554 0.001 B
FEED BACK SWITCHING Q507 KTC3198
VR502 470
B ADJ
R553 39K 1/2W
R554 22K 1/2W
R529 2.7K 1/4W +-1%
D528 MTZJ6.8B
R533 1.2K 1/4W
R532 100 1/4W
R503 3.3K 1/2W
D522 SB140-EIC
B502 W4BRH3.5X6X1.0X2
C512 0.001 B
D513 1SS133
R543 680 1/4W
D506 1N4937
R502 4.7 1/4W
C510 35V 100 YK
D518 1SS133
R506 2.2K 1/4W
D521 1SS133
C515 0.0015 B
R542 0.27 1W
HS501 763WAA0174
C529 250V 0.0022 KX
CAUTION: IS THE LIVE CONNECTION
T501 81290794
DC IN
P1
P2
P3
COL
ADJ
GND
NC
GND TP502
B501_1 W5RH3.5X5X1
C516 500V 470P B
D505 21DQ09N
D509 21DQ09N
8.5V
C520 16V 1000 MHE
D510_1 RU2AM-EIC
W804
C517 2KV 0.0022 R
135V
C532 2KV 0.0015 R
C521 200V 220 YXF
R509 220K 1/2W
TO POWER
(CP401B) CP401A A2001WV2-5P
+B
H GND
NC
D511 1N4937
R511 1K 1/4W
D515 MTZJ15B
C537 100V 4.7 MHE
4.5V
D512 21DQ09N
C504 500V 470P B
8V
C531 16V 2200 MHE
(CP851B) CP851A A2001WV2-11P
POWER_FAIL
SOUND+B
SOUND_GND
UNREG+8V
AT+13V
MOTOR_GND
MOTOR+12V
GND
W808
W811
D508 RU2AM-EIC
C523 25V 2200 MHE
13V
C501 2KV 470P R
D535 1SS133
D519 21DQ09N
12V
C519 500V 470P B
C524 25V 1000 MHE
D534 1SS133
D533 1SS133
D526 1SS133
R507 1.5K 1/4W
PCB020 VPA150

NOTE:THE RESISTOR MARKED F IS FUSE RESISTOR.
THE ALUMI ELECTROLYTIC CAPACITOR MARKED NP
IS NON POLAR ONE.

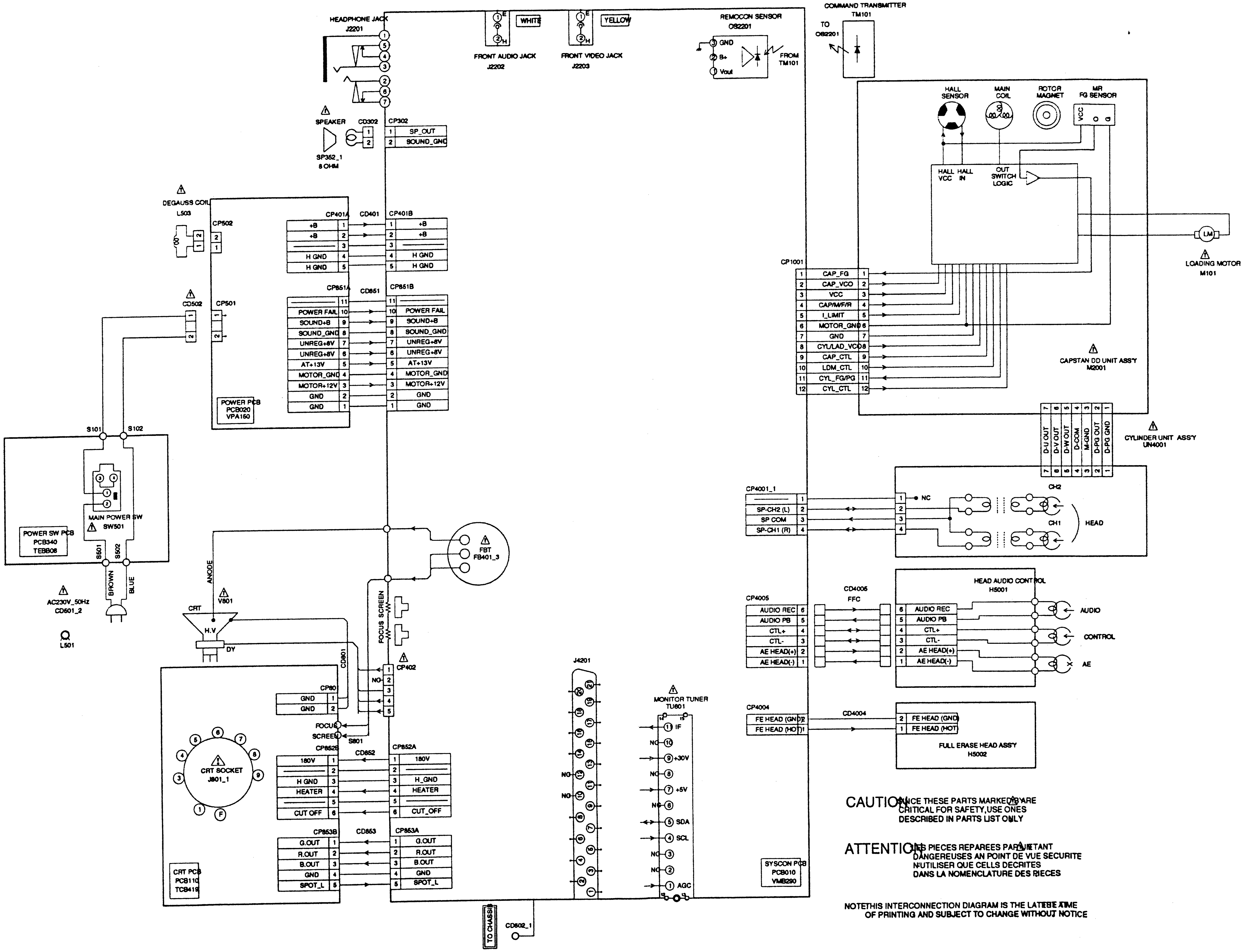
NOTE:THE DC VOLTAGE AT EACH PART WAS MEASURED
WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST
WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

NOTE:THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME
OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE

CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE
CRITICAL FOR SAFETY,USE ONES
DESCRIBED IN PARTS LIST ONLY

ATTENTION: LES PIECES REPAREES PAR ⚠ ETANT
DANGEREUSES AN POINT DE VUE SECURITE
N'UTILISER QUE CELLS DECRITES
DANS LA NOMENCLATURE DES PIECES

INTERCONNECTION DIAGRAM


HEADPHONE JACK J2201
WHITE
YELLOW
FRONT AUDIO JACK J2202
FRONT VIDEO JACK J2203
REMOCON SENSOR OS2201
GND
B+
Vout
FROM TM101
COMMAND TRANSMITTER TM101
TO OS2201
SPEAKER SP352_1 8 OHM
CD302
CP302
SP_OUT
SOUND_GND
DEGAUSS COIL L503
CP502
CP401A
CD401
CP401B
+B
H GND
CP851A
CD851
CP851B
POWER FAIL
SOUND+B
SOUND_GND
UNREG+8V
AT+13V
MOTOR_GND
MOTOR+12V
GND
POWER PCB PCB020 VPA150
CD502
CP501
S101
S102
MAIN POWER SW SW501
POWER SW PCB PCB340 TEB808
S501
S502
BROWN
BLUE
AC230V_50Hz CD501_2
L501
ANODE
CRT
V801
H.V
DY
FBT FB401_3
FOCUS SCREEN
CD801
NC
CP402
CP80
FOCUS
SCREEN
S801
CP852B
CD852
CP852A
180V
H GND
HEATER
CUT OFF
CRT SOCKET J801_1
CP853B
CD853
CP853A
G.OUT
R.OUT
B.OUT
SPOT_L
CRT PCB PCB110 TCB419
TO CHASSIS
CD602_1
J4201
MONITOR TUNER TU601
IF
+30V
+5V
SDA
SCL
AGC
SYSCON PCB PCB010 VMB290
HALL SENSOR
MAIN COIL
ROTOR MAGNET
MR FG SENSOR
VCC
HALL VCC
HALL IN
OUT SWITCH LOGIC
LM
LOADING MOTOR M101
CP1001
CAP_FG
CAP_VCO
CAP/M/F/R
I_LIMIT
MOTOR_GND
CYL/LAD_VCO
CAP_CTL
LDM_CTL
CYL_FG/PG
CYL_CTL
CAPSTAN DD UNIT ASS'Y M2001
D-U OUT
D-V OUT
D-W OUT
D-COM
M-GND
D-PG OUT
D-PG GND
CYLINDER UNIT ASS'Y UN4001
CP4001_1
SP-CH2 (L)
SP COM
SP-CH1 (R)
NC
CH2
CH1
HEAD
CP4005
CD4005
FFC
HEAD AUDIO CONTROL H5001
AUDIO REC
AUDIO PB
CTL+
CTL-
AE HEAD(+)
AE HEAD(-)
AUDIO
CONTROL
AE
CP4004
CD4004
FE HEAD (GND)
FE HEAD (HOT)
FULL ERASE HEAD ASS'Y H5002
A
B
C
D
E
F
G
H
1
2
3
4
5
6
7
8

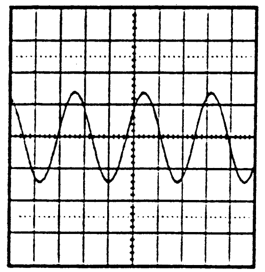
CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY

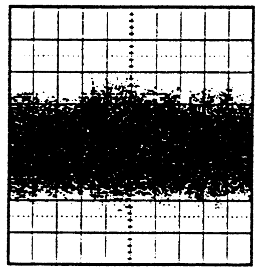
ATTENTION: LES PIECES REPAREES PAR ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES

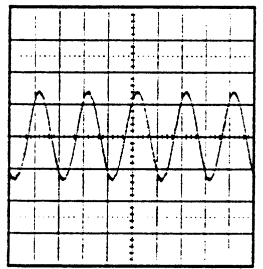
NOTE: THIS INTERCONNECTION DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE

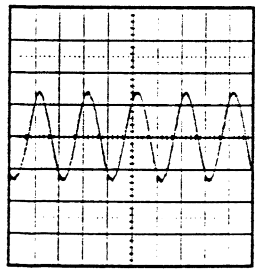
WAVEFORMS

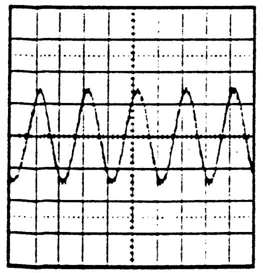
Y/C/AUDIO/HEAD AMP

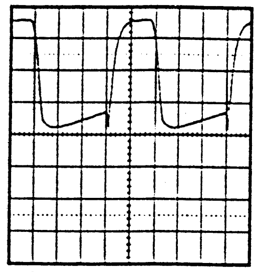

① REC
20V 5µs/div

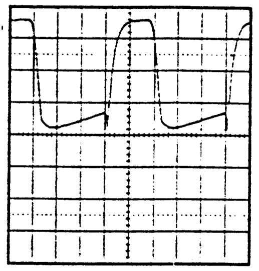

② PB
50mV 5ms/div

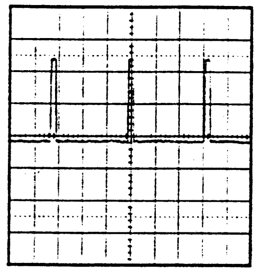

③ REC
20V 2ms/div

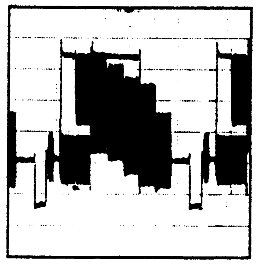

④ REC
0.5V 0.5ms/div

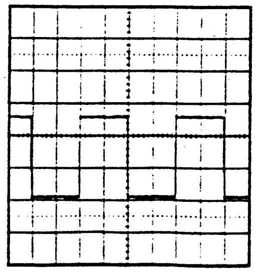

⑤ REC
100mV 0.5ms/div


⑥ 1V 5µs/div

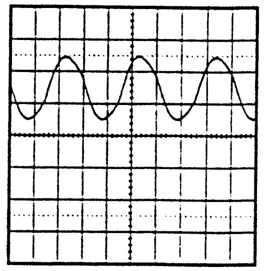

⑦ 1V 5µs/div

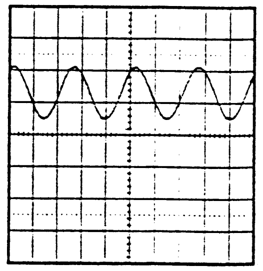

⑧ REC
2V 20µs/div

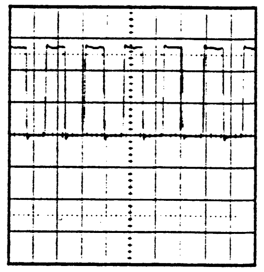

⑨ PB
0.5V 10ms/div

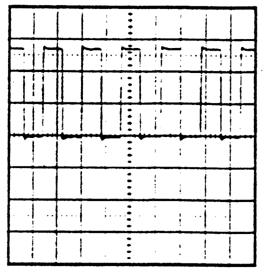

⑩ PB
2V 10ms/div

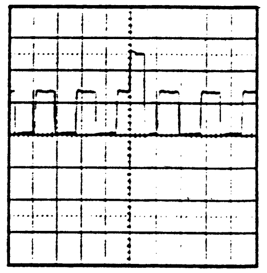
MICON


⑪ REC
1V 10µs/div


⑫ REC
2V 1ms/div

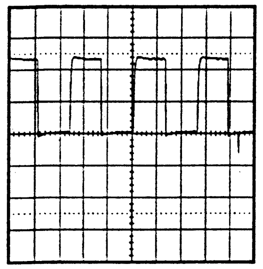

⑬ PB
2V 0.5µs/div

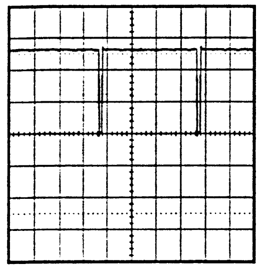

⑭ PB
2V 0.5µs/div

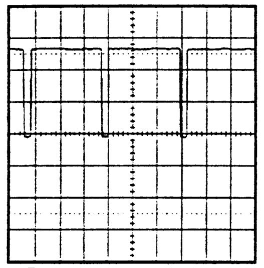

⑮ REC
2V 1ms/div

NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

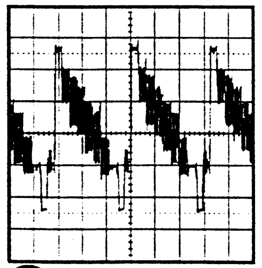
WAVEFORMS

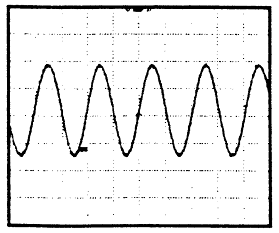

⑯ PB
2V 5ms/div


⑰ REC
2V 5ms/div

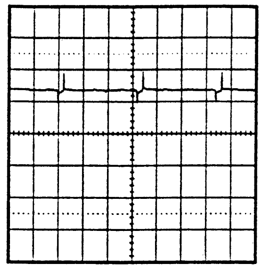

⑱ REC
2V 20µs/div

21PIN/IN/OUT

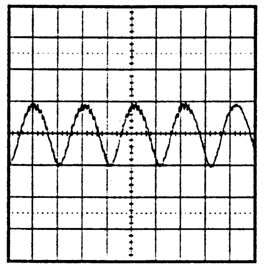

⑲ AV OUT
200mV 20µs/div


⑳ AV OUT
0.5V 500µs/div

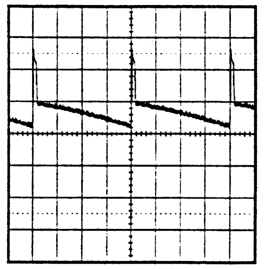
CHROMA/IF

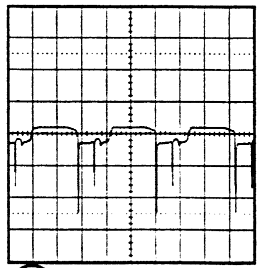

㉑ REC
2V 20µs/div

SOUND AMP

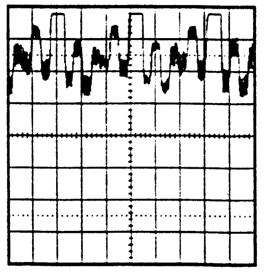

㉒ REC
0.5V 0.5ms/div

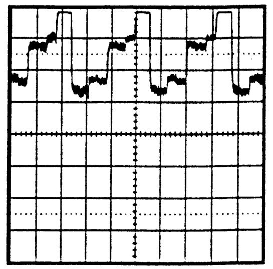
DEFLECTION

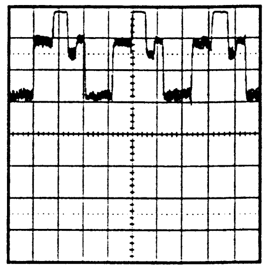

㉓ 20V 5ms/div


㉔ 5V 20µs/div

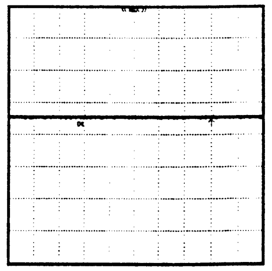
CRT

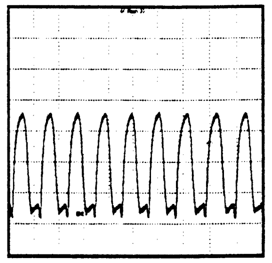

㉕ 50V 20µs/div


㉖ 50V 20µs/div

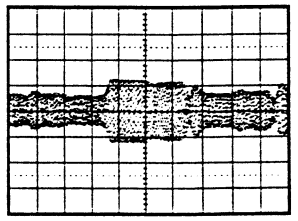

㉗ 50V 20µs/div

TV POWER


㊿ 5V 10ms/div


(51) 5V 10ms/div

SECAM

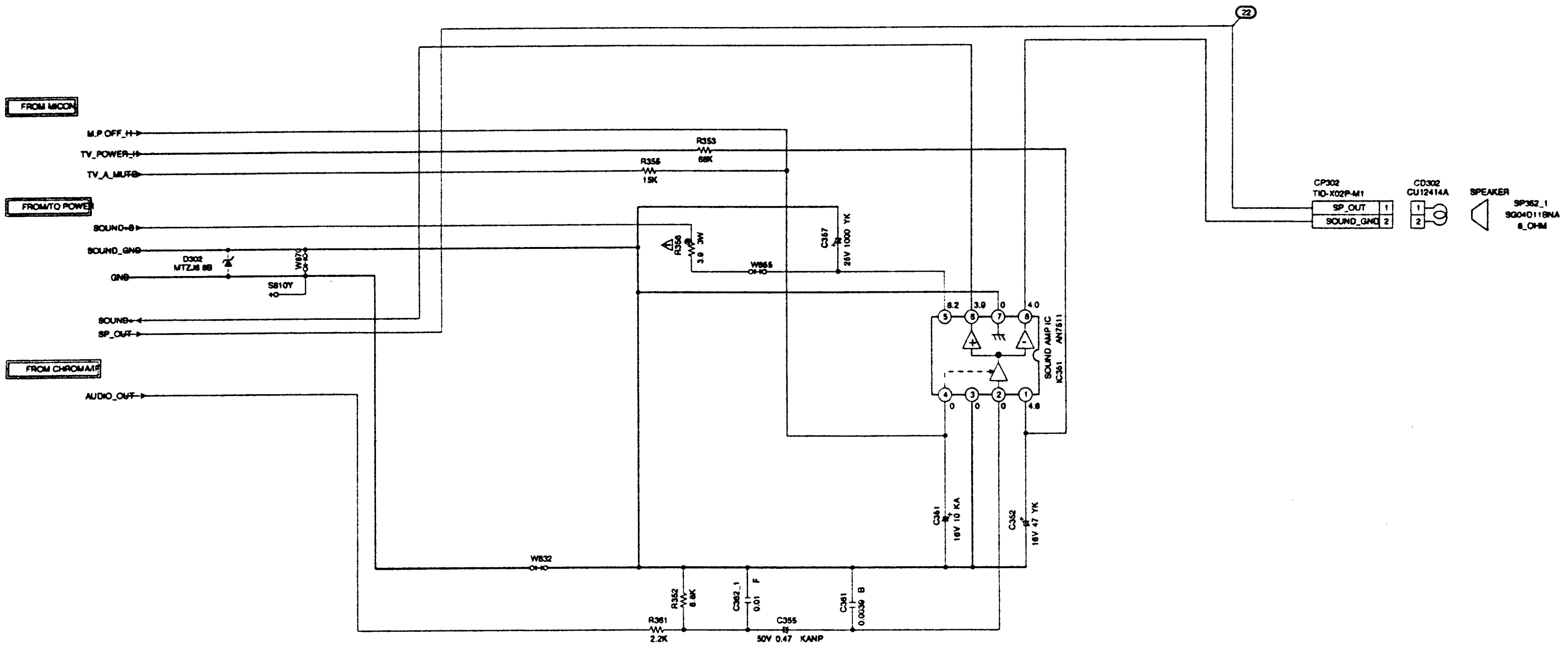

(52) PB
200mV 5µs/div

NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

SOUND AMP SCHEMATIC DIAGRAM

(SYSCON PCB)

(COMBI 3602 SI)


FROM MICON
M.P.OFF_H
TV_POWER_H
TV_A_MUTE
FROM/TO POWER
SOUND+8
SOUND_GND
GND
D302
MTZJ6 8B
W870
S810Y
SOUND+
SP_OUT
FROM CHROMA/IF
AUDIO_OUT
R353
68K
R356
15K
R356
3.9 3W
C357
25V 1000 YK
W865
8.2
3.9
0
4.0
5
6
7
8
4
3
2
1
0
0
0
4.6
SOUND AMP IC
AN7511
IC361
C361
16V 10 KA
C352
16V 47 YK
W832
R352
6.8K
C362_1
0.01 F
C361
0.0039 B
R361
2.2K
C355
50V 0.47 KANP
22
CP302
TIO-X02P-M1
SP_OUT 1
SOUND_GND 2
CD302
CU12414A
1
2
SPEAKER
SP362_1
SG04D11BNA
8_OHM

PCB010
VMB290

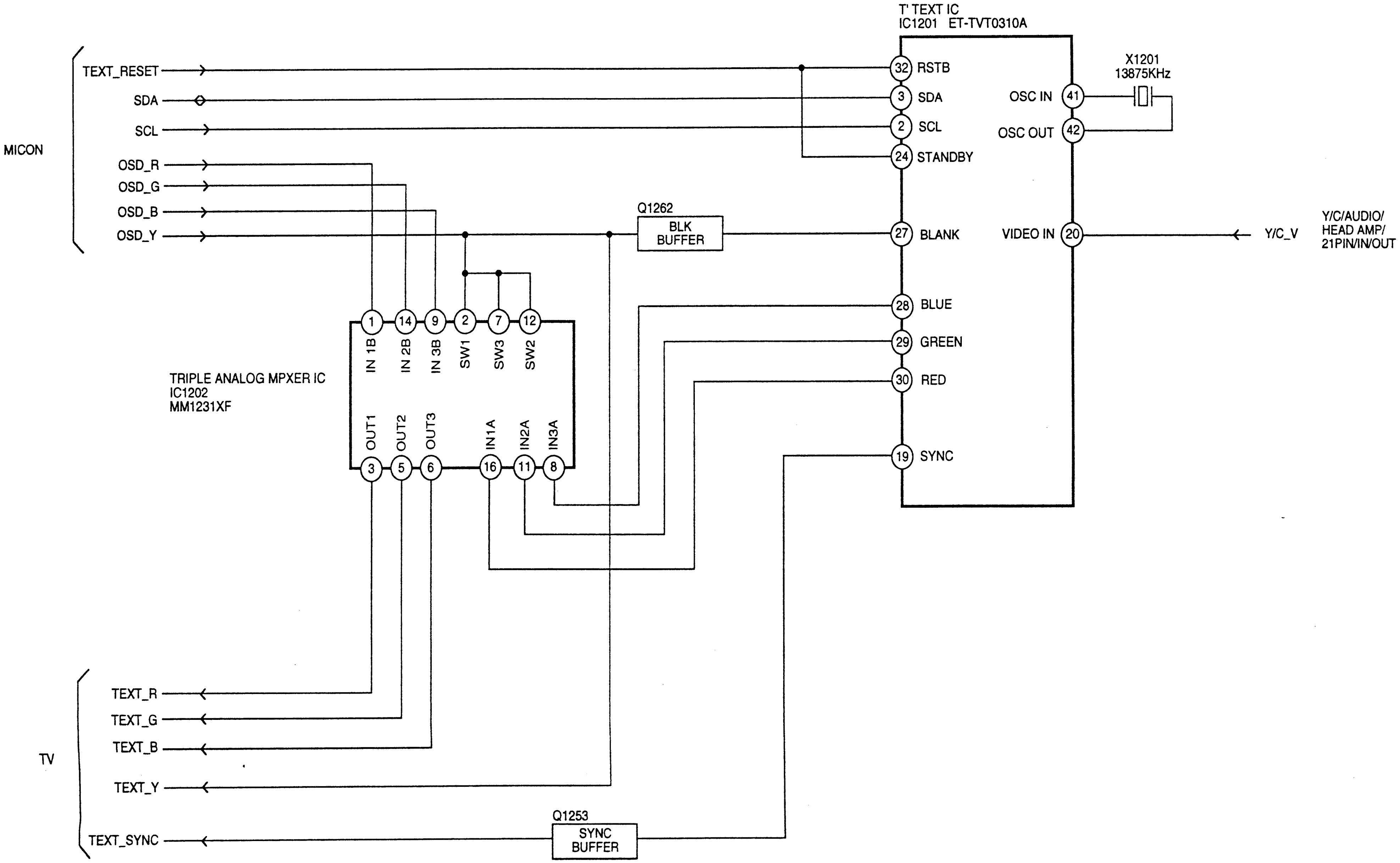
ATTENTION LES PIECES REPAREES PAR ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES

CAUTION SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY

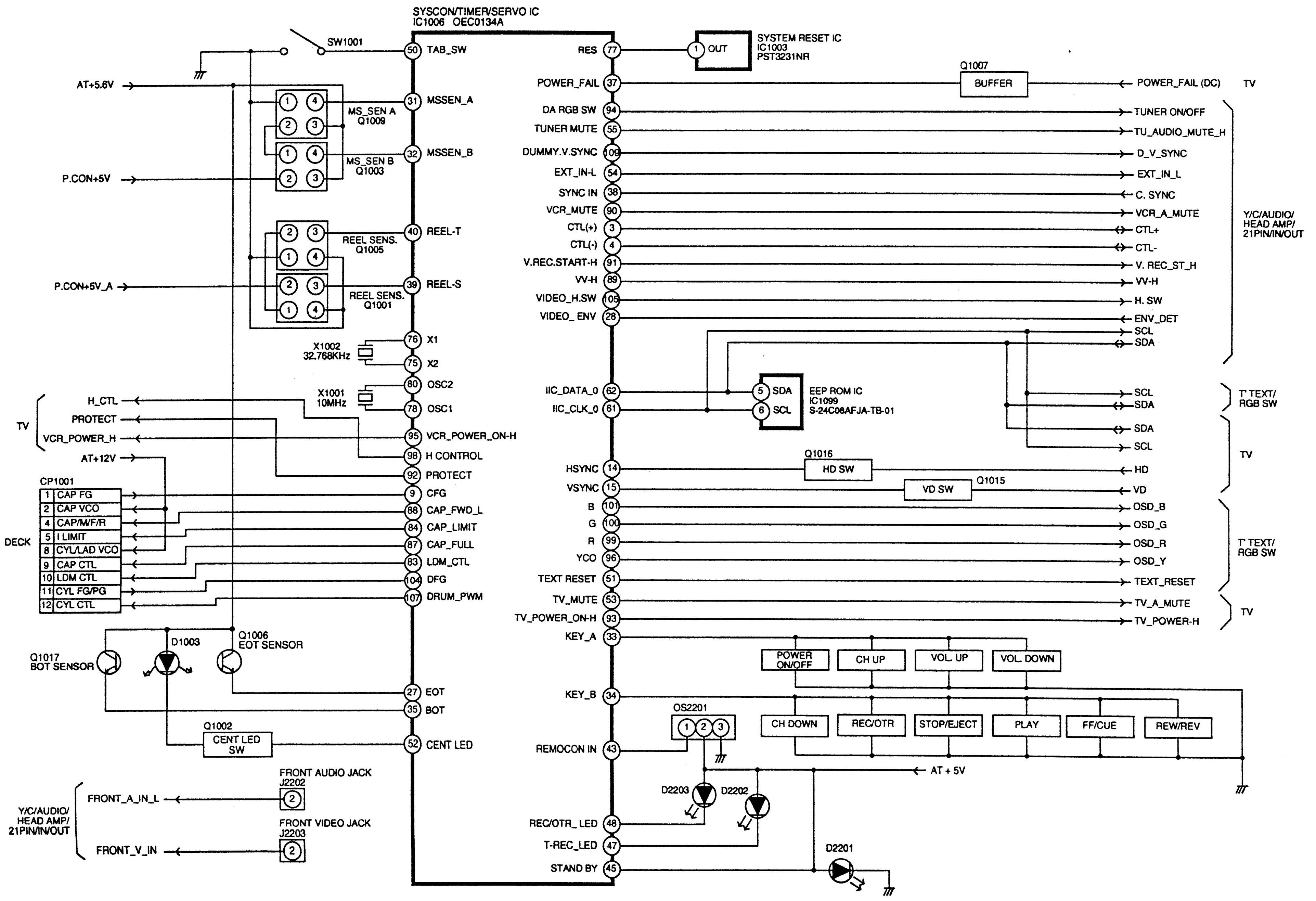
NOTE:THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE

NOTE:THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

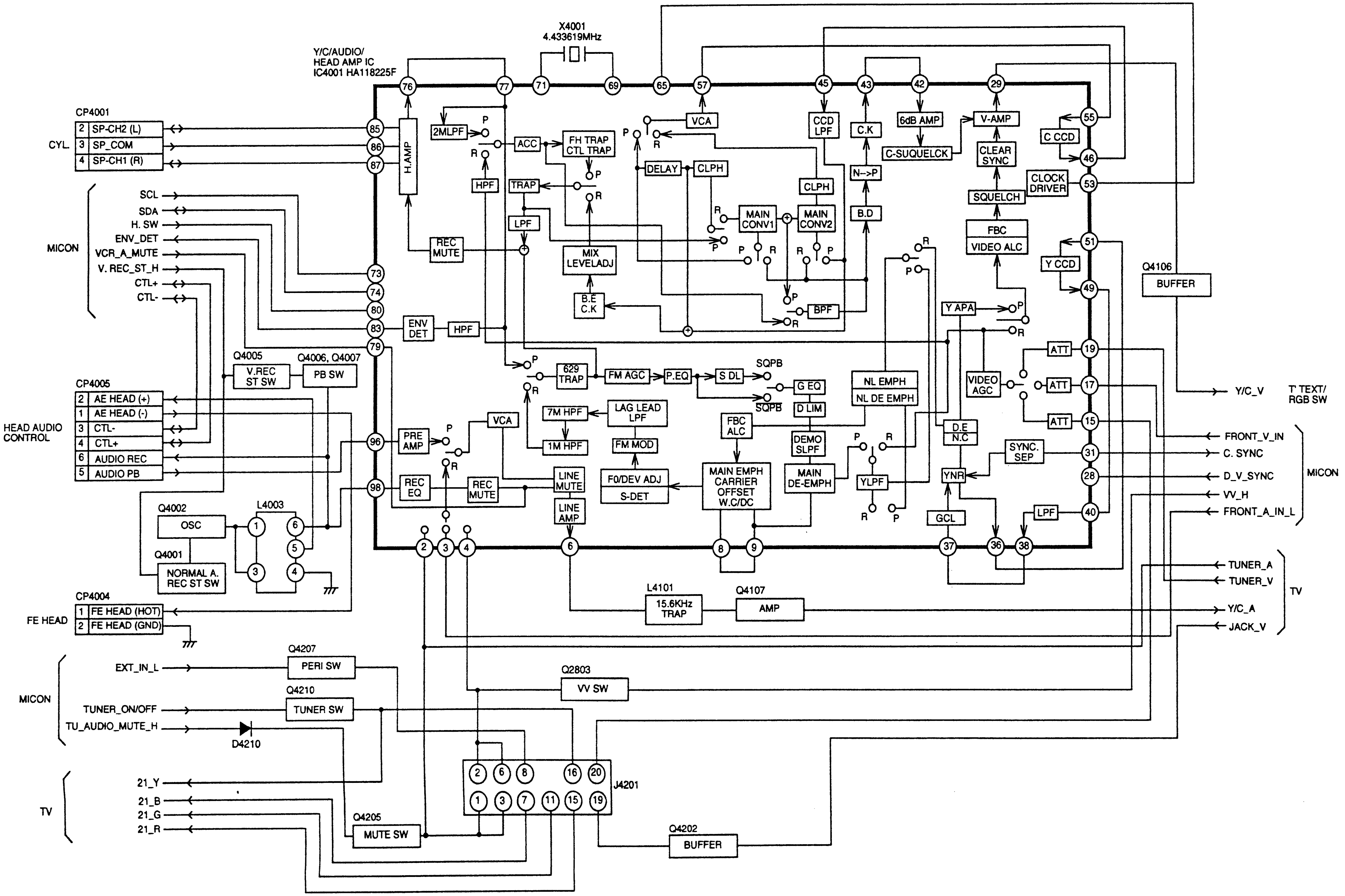
T' TEXT/RGB SW BLOCK DIAGRAM


T' TEXT IC
IC1201 ET-TVT0310A
MICON
TEXT_RESET
SDA
SCL
OSD_R
OSD_G
OSD_B
OSD_Y
32 RSTB
3 SDA
2 SCL
24 STANDBY
27 BLANK
28 BLUE
29 GREEN
30 RED
19 SYNC
OSC IN 41
OSC OUT 42
VIDEO IN 20
X1201
13875KHz
Y/C_V
Y/C/AUDIO/
HEAD AMP/
21PIN/IN/OUT
Q1262
BLK
BUFFER
TRIPLE ANALOG MPXER IC
IC1202
MM1231XF
1 IN 1B
14 IN 2B
9 IN 3B
2 SW1
7 SW3
12 SW2
3 OUT1
5 OUT2
6 OUT3
16 IN1A
11 IN2A
8 IN3A
TV
TEXT_R
TEXT_G
TEXT_B
TEXT_Y
TEXT_SYNC
Q1253
SYNC
BUFFER

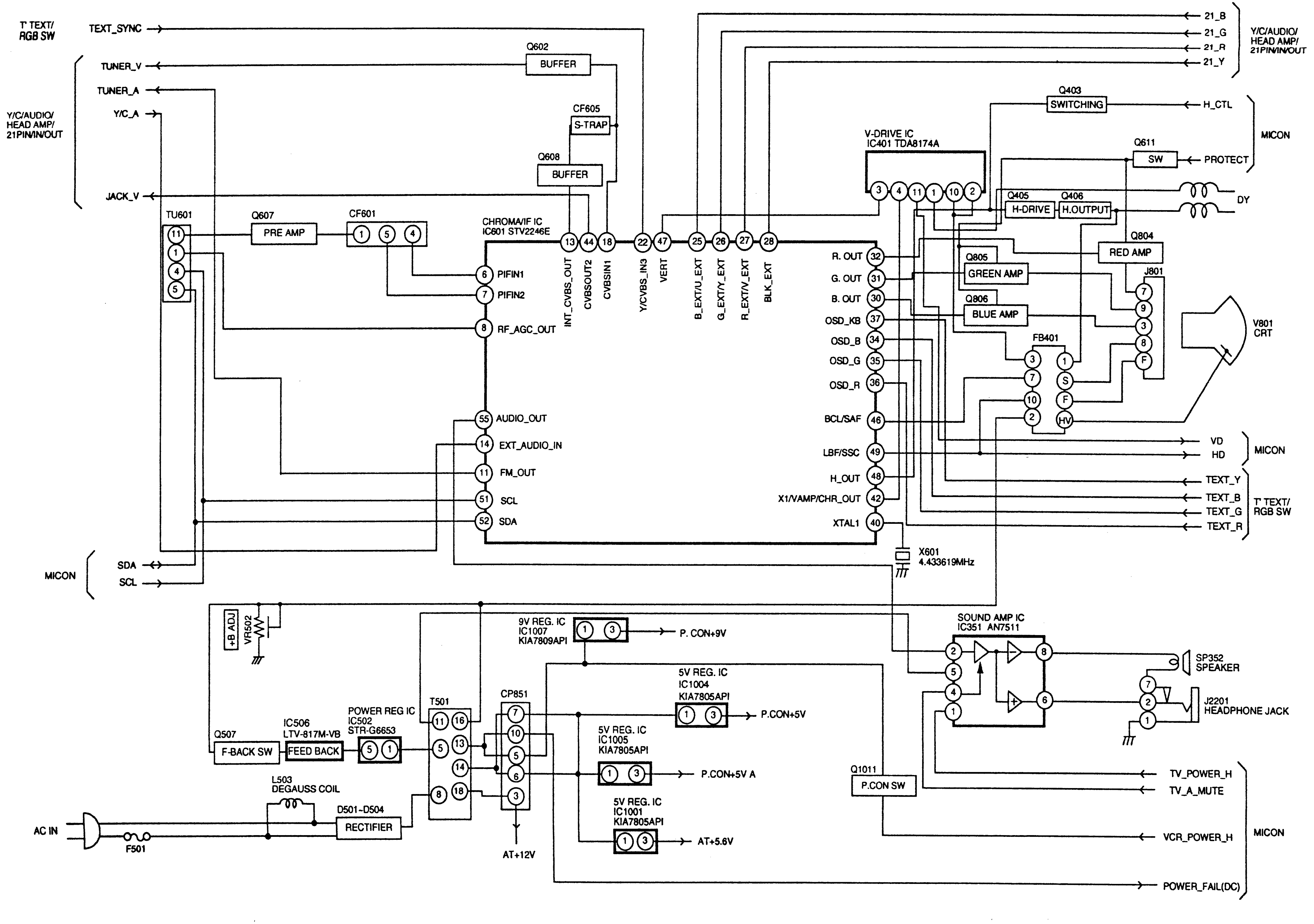
MICON BLOCK DIAGRAM


SYSCON/TIMER/SERVO IC
IC1006 OEC0134A
SW1001
50 TAB_SW
AT+5.6V
31 MSSEN_A
MS_SEN A
Q1009
MS_SEN B
Q1003
32 MSSEN_B
P.CON+5V
40 REEL-T
REEL SENS.
Q1005
REEL SENS.
Q1001
39 REEL-S
P.CON+5V_A
X1002
32.768KHz
76 X1
75 X2
X1001
10MHz
80 OSC2
78 OSC1
TV
H_CTL
PROTECT
VCR_POWER_H
95 VCR_POWER_ON-H
98 H CONTROL
AT+12V
92 PROTECT
CP1001
DECK
1 CAP FG
2 CAP VCO
4 CAP/M/F/R
5 I LIMIT
8 CYL/LAD VCO
9 CAP CTL
10 LDM CTL
11 CYL FG/PG
12 CYL CTL
9 CFG
88 CAP_FWD_L
84 CAP_LIMIT
87 CAP_FULL
83 LDM_CTL
104 DFG
107 DRUM_PWM
Q1017
BOT SENSOR
D1003
Q1006
EOT SENSOR
27 EOT
35 BOT
Q1002
CENT LED SW
52 CENT LED
FRONT AUDIO JACK
J2202
FRONT_A_IN_L
FRONT VIDEO JACK
J2203
FRONT_V_IN
Y/C/AUDIO/
HEAD AMP/
21PIN/IN/OUT
RES 77
OUT
SYSTEM RESET IC
IC1003
PST3231NR
Q1007
BUFFER
POWER_FAIL 37
POWER_FAIL (DC)
TV
DA RGB SW 94
TUNER ON/OFF
TUNER MUTE 55
TU_AUDIO_MUTE_H
DUMMY.V.SYNC 109
D_V_SYNC
EXT_IN-L 54
EXT_IN_L
SYNC IN 38
C. SYNC
VCR_MUTE 90
VCR_A_MUTE
CTL(+) 3
CTL+
CTL(-) 4
CTL-
V.REC.START-H 91
V. REC_ST_H
VV-H 89
VV-H
VIDEO_H.SW 105
H. SW
VIDEO_ENV 28
ENV_DET
SCL
SDA
Y/C/AUDIO/
HEAD AMP/
21PIN/IN/OUT
IIC_DATA_0 62
IIC_CLK_0 61
5 SDA
6 SCL
EEP ROM IC
IC1099
S-24C08AFJA-TB-01
SCL
SDA
T' TEXT/
RGB SW
SDA
SCL
TV
Q1016
HSYNC 14
HD SW
HD
VSYNC 15
VD SW
Q1015
VD
B 101
OSD_B
G 100
OSD_G
R 99
OSD_R
YCO 96
OSD_Y
TEXT RESET 51
TEXT_RESET
T' TEXT/
RGB SW
TV_MUTE 53
TV_A_MUTE
TV_POWER_ON-H 93
TV_POWER-H
TV
KEY_A 33
POWER ON/OFF
CH UP
VOL. UP
VOL. DOWN
KEY_B 34
CH DOWN
REC/OTR
STOP/EJECT
PLAY
FF/CUE
REW/REV
OS2201
REMOCON IN 43
AT + 5V
D2203
D2202
REC/OTR_LED 48
T-REC_LED 47
STAND BY 45
D2201

Y/C/AUDIO/HEAD AMP/21PIN/IN/OUT BLOCK DIAGRAM


X4001
4.433619MHz
Y/C/AUDIO/
HEAD AMP IC
IC4001 HA118225F
76
77
71
69
65
57
45
43
42
29
CP4001
2 SP-CH2 (L)
3 SP_COM
4 SP-CH1 (R)
CYL
85
86
87
H.AMP
2MLPF
P
R
ACC
FH TRAP
CTL TRAP
VCA
CCD
LPF
C.K
6dB AMP
V-AMP
55
C CCD
46
C-SUQUELCK
CLEAR
SYNC
DELAY
CLPH
N-->P
CLOCK
DRIVER
53
HPF
TRAP
CLPH
SQUELCH
MICON
SCL
SDA
H. SW
ENV_DET
VCR_A_MUTE
V. REC_ST_H
CTL+
CTL-
LPF
MAIN
CONV1
MAIN
CONV2
B.D
FBC
VIDEO ALC
51
REC
MUTE
MIX
LEVELADJ
Y CCD
Q4106
BUFFER
49
73
74
80
83
79
B.E
C.K
BPF
Y APA
ENV
DET
HPF
ATT
19
Q4005
V.REC
ST SW
Q4006, Q4007
PB SW
629
TRAP
FM AGC
P.EQ
S DL
SQPB
G EQ
NL EMPH
NL DE EMPH
VIDEO
AGC
ATT
17
Y/C_V
T' TEXT/
RGB SW
CP4005
2 AE HEAD (+)
1 AE HEAD (-)
3 CTL-
4 CTL+
6 AUDIO REC
5 AUDIO PB
HEAD AUDIO
CONTROL
7M HPF
LAG LEAD
LPF
SQPB
D LIM
FBC
ALC
D.E
N.C
ATT
15
FRONT_V_IN
96
PRE
AMP
VCA
1M HPF
FM MOD
DEMO
SLPF
SYNC.
SEP
31
C. SYNC
LINE
MUTE
F0/DEV ADJ
S-DET
MAIN EMPH
CARRIER
OFFSET
W.C/DC
MAIN
DE-EMPH
YLPF
YNR
28
D_V_SYNC
MICON
98
REC
EQ
REC
MUTE
LINE
AMP
VV_H
Q4002
OSC
L4003
GCL
LPF
40
FRONT_A_IN_L
Q4001
NORMAL A.
REC ST SW
1
6
5
3
4
2
3
4
6
8
9
37
36
38
TUNER_A
TUNER_V
TV
L4101
15.6KHz
TRAP
Q4107
AMP
Y/C_A
CP4004
1 FE HEAD (HOT)
2 FE HEAD (GND)
FE HEAD
JACK_V
Q4207
PERI SW
EXT_IN_L
Q2803
VV SW
MICON
Q4210
TUNER SW
TUNER_ON/OFF
TU_AUDIO_MUTE_H
D4210
2
6
8
16
20
1
3
7
11
15
19
J4201
TV
21_Y
21_B
21_G
21_R
Q4205
MUTE SW
Q4202
BUFFER

TV BLOCK DIAGRAM


T' TEXT/ RGB SW
TEXT_SYNC
Y/C/AUDIO/ HEAD AMP/ 21PIN/IN/OUT
TUNER_V
TUNER_A
Y/C_A
JACK_V
Q602
BUFFER
CF605
S-TRAP
Q608
BUFFER
TU601
Q607
PRE AMP
CF601
CHROMA/IF IC
IC601 STV2246E
INT_CVBS_OUT
CVBSOUT2
CVBSIN1
Y/CVBS_IN3
VERT
B_EXT/U_EXT
G_EXT/Y_EXT
R_EXT/V_EXT
BLK_EXT
PIFIN1
PIFIN2
RF_AGC_OUT
AUDIO_OUT
EXT_AUDIO_IN
FM_OUT
SCL
SDA
R. OUT
G. OUT
B. OUT
OSD_KB
OSD_B
OSD_G
OSD_R
BCL/SAF
LBF/SSC
H_OUT
X1/VAMP/CHR_OUT
XTAL1
X601
4.433619MHz
21_B
21_G
21_R
21_Y
Y/C/AUDIO/ HEAD AMP/ 21PIN/IN/OUT
Q403
SWITCHING
H_CTL
MICON
V-DRIVE IC
IC401 TDA8174A
Q611
SW
PROTECT
Q405
H-DRIVE
Q406
H.OUTPUT
DY
Q804
RED AMP
Q805
GREEN AMP
Q806
BLUE AMP
J801
V801
CRT
FB401
HV
VD
HD
MICON
TEXT_Y
TEXT_B
TEXT_G
TEXT_R
T' TEXT/ RGB SW
MICON
SDA
SCL
+B ADJ
VR502
9V REG. IC
IC1007
KIA7809API
P. CON+9V
SOUND AMP IC
IC351 AN7511
SP352
SPEAKER
J2201
HEADPHONE JACK
5V REG. IC
IC1004
KIA7805API
P.CON+5V
5V REG. IC
IC1005
KIA7805API
P.CON+5V A
5V REG. IC
IC1001
KIA7805API
AT+5.6V
Q507
F-BACK SW
IC506
LTV-817M-VB
FEED BACK
POWER REG IC
IC502
STR-G6653
T501
CP851
AT+12V
L503
DEGAUSS COIL
D501-D504
RECTIFIER
AC IN
F501
Q1011
P.CON SW
TV_POWER_H
TV_A_MUTE
VCR_POWER_H
MICON
POWER_FAIL(DC)

ELECTRICAL REPLACEMENT PARTS LIST

REF. NO.	MD20X		COMBI 3602 SI	
	PART NO.	DESCRIPTION	PART NO.	DESCRIPTION
L1202		————	02167F100J	COIL 10 UH
L1203		————	02167F100J	COIL 10 UH
L1204		————	02167F101J	COIL 100 UH
L2801	02167F470J	COIL 47 UH		DEL
L2804	0216A6680K	COIL 68 UH		DEL
L2806	0216A6101K	COIL 100 UH		DEL
B402	024HT03553	CORE,BEADS W5RH3.5X5X1.0		DEL
CF601	102E038R9B	FILTER,SAW K3953M	1022038R9E	FILTER,SAW SAFGP38M9VAKZ00B
CF602	102E238R94	FILTER,SAW K9650M		DEL
CF603	1012T03101	FILTER CERAMIC TRAP MKT31.9MA110P-TF	1012T04001	FILTER,CERAMIC TRAP MKT40.4MA110P-TF
CF604	1012T04001	FILTER,CERAMIC TRAP MKT40.4MA110P-TF		DEL
CF605	1012T5R507	FILTER CERAMIC TRAP TPWA02B-TF21	1012T5R503	FILTER,CERAMIC TRAP TPS5.5MB-TF21
TM101	076R0CH740	TRANSMITTER R25-1918	076R0CH760	TRANSMITTER R25-1925
X1201		————	100CT01302	CRYSTAL HC-49/U-S
PCB010	A5E448I010	SYSCON PCB ASS'Y VMB290A	A5E446I010	SYSCON PCB ASS'Y VMB290A

MECHANICAL REPLACEMENT PARTS LIST

REF. NO.	MD20X		COMBI 3602 SI	
	PART NO.	DESCRIPTION	PART NO.	DESCRIPTION
101	A5E448I720	CABINET,FRONT ASS'Y	A5E446I720	CABINET,FRONT ASS'Y
101A	701WPJC246	CABINET,FRONT	701WPJC251	CABINET,FRONT
101B	712WPJB794	FLAT,FLAP	712WPJB799	FLAT,FLAP
101F	735WPBA725	BUTTON,FRAME	735WPBA728	BUTTON,FRAME
102	A5E448I740	CABINET,BACK ASS'Y	A5E446I740	CABINET,BACK ASS'Y
116	722202A720	SHEET,RATING	722202A723	SHEET,RATING
122		————	7220001053	SHEET,PTB
---	793WCDB753	GIFT BOX	793WCDB757	GIFT BOX
---	JB5Z0300	POLYBAG,INSTRUCTION	JB5Z0200	POLYBAG.INSTRUCTION
---	J5E44801A	INSTRUCTION BOOK(F)	J5E44601A	INSTRUCTION BOOK
---	J5E44807A	QUICK SET-UP SHEET	J5E44607A	QUICK SET-UP SHEET
---	J5E44810A	INSTRUCTION BOOK(H)		DEL

CHASSIS REPLACEMENT PARTS LIST

REF. NO.	MD20X		COMBI 3602 SI	
	PART NO.	DESCRIPTION	PART NO.	DESCRIPTION
300	A5E415A420K	DECK ASS'Y	A5E414A420K	DECK ASS'Y
350		————	85OA500026	AHC ASS'Y

WHEN REPLACING EEPROM (MEMORY) IC

ADDRESS	MD20X	COMBI 3602 SI
	DATA	DATA
0B7	B0	80
0B9	81	8C
0BC	C1	C0
0BD	00	E1
0BE	41	21
0BF	02	06
0C1	07	0F
0C2	7C	54
0CC	2A	32
0CE	1D	19
0D6	64	6B
0D9	CA	EA
0DB	3A	00
0DE	68	5E
0DF	5F	5E
0E1	A0	60
0E2	30	B0
0E3	FB	FA
0E5	05	01
0E6	F0	00
0E9	FF	60
0EA	91	99
0ED	92	97
0EF	28	B2
101	04	03
102	06	07
104	0F	F3
105	68	00
106	3F	23
107	43	42
108	CB	20
109	30	11
10A	F9	F0
10B	0F	02
10C	42	09
10F	00	10
110	20	00
111	03	07
112	00	04
113	07	00
115	00	20
116	00	E0
119	80	40
11A	03	00
11C	07	00

ELECTRICAL REPLACEMENT PARTS LIST

	MD20X		COMBI 3602 SI	
REF. NO.	PART NO.	DESCRIPTION	PART NO.	DESCRIPTION
C1033		————	CS0RCH4G2J	CC 180 PF 50V CH
C1045	CS0RB0216K	CC 1 UF 16V B		DEL
C1102		————	CS0RCH4U2J	CC 680 PF 50V CH
C1103		————	E02LU0221M	CE 220 UF 6.3V
C1201		————	CS0RCH4S1J	CC 56 PF 50V CH
C1202		————	E02LU2101M	CE 100 UF 16V
C1204		————	CS0RB0414K	CC 0.01 UF 50V B
C1205		————	E50HU2470M	CE 47 UF 16V
C1206		————	E50HU0470M	CE 47 UF 6.3V
C1207		————	E00NU0470M	CE 47 UF 6.3V
C1208		————	CS0RF0415Z	CC 0.1 UF 50V F
C1209		————	CS0RF0415Z	CC 0.1 UF 50V F
C1210		————	CS0RF03Q5Z	CC 0.47 UF 25V F
C1211		————	CS0RF0415Z	CC 0.1 UF 50V F
C1212		————	CS0RF0415Z	CC 0.1 UF 50V F
C1213		————	CS0RF0415Z	CC 0.1 UF 50V F
C1214		————	E02LU2470M	CE 47 UF 16V
C1215		————	CS0RB04H4K	CC 0.022 UF 50V B
C1216		————	CS0RF0415Z	CC 0.1 UF 50V F
C1217		————	CS0RCH4L1J	CC 33 PF 50V CH
C1218		————	CS0RF03H5Z	CC 0.22 UF 25V F
C1219		————	CS0RB04H4K	CC 0.022 UF 50V B
C1220		————	CS0RF0415Z	CC 0.1 UF 50V F
C1224		————	P6M9W0474J	CMPL 0.47 UF 50V TF
C1255		————	CS0RF0415Z	CC 0.1 UF 50V F
C1256		————	E50HU0101M	CE 100 UF 6.3V
C1257		————	E50HU0101M	CE 100 UF 6.3V
C1259		————	CS0RCH4L1J	CC 33 PF 50V CH
C1273		————	E02LU2101M	CE 100 UF 16V
C1274		————	E02LU2101M	CE 100 UF 16V
C1284		————	E02LT0102M	CE 1000 UF 6.3V
C2802	CS0RB0414K	CC 0.01 UF 50V B		DEL
C2803	E50HU5010M	CE 1 UF 50V		DEL
C2804	CS0RB04H4K	CC 0.022 UF 50V B		DEL
C2807	E50HU52R2M	CE 2.2 UF 50V		DEL
C2809	CS0RB04H3K	CC 0.0022UF 50V B		DEL
C2811	CS0RB04H3K	CC 0.0022UF 50V B		DEL
C2812	E50HU5010M	CE 1 UF 50V		DEL
C2813	E50HU0470M	CE 47 UF 6.3V		DEL
C2814	CS0RB02Q5K	CC 0.47 UF 16V B		DEL
C2815	CS0RF0415Z	CC 0.1 UF 50V F		DEL
C2817	CS0RCH4V1J	CC 75 PF 50V CH		DEL
C2818	CS0RF0414Z	CC 0.01 UF 50V F		DEL
C2819	CS0RCH4B2J	CC 120 PF 50V CH		DEL

ELECTRICAL REPLACEMENT PARTS LIST

	MD20X		COMBI 3602 SI	
REF. NO.	PART NO.	DESCRIPTION	PART NO.	DESCRIPTION
C2821	CS0RB0414K	CC 0.01 UF 50V B		DEL
C2822	E50HU50R1M	CE 0.1 UF 50 V		DEL
C2823	CS0RB0413K	CC 0.001 UF 50V B		DEL
C2824	E50HU5R47M	CE 0.47 UF 50V		DEL
C2825	CQGTB0414K	CC 0.01 UF 50V B		DEL
C2826	CS0RCH412J	CC 100 PF 50V CH		DEL
C2827	E50HU54R7M	CE 4.7 UF 50V		DEL
C4020	CS0RB04E3K	CC 0.0015UF 50V B	CS0RCH4W2J	CC 820 PF 50V CH
C4035	CS0RF0414Z	CC 0.01 UF 50V F		DEL
C4074		————	CS0RCH4L2J	CC 330 PF 50V CH
C4075		————	CS0RB0414K	CC 0.01 UF 50V B
C4101	CS0RB04U4K	CC 0.068 UF 50V B	CS0RB0315K	CC 0.1 UF 25V B
C4103	CHG0F0415Z	CC 0.1 UF 50V F		DEL
C4104	CS0RB04L3K	CC 0.0033UF 50V B	CS0RB0414K	CC 0.01 UF 50V B
C4193	CS0RB04E4K	CC 0.015 UF 50V B	CS0RB04W3K	CC 0.0082UF 50V B
D604	DD1R0MA770	DIODE,SILICON MA77		DEL
D1201		————	D2BT0AK040	DIODE SCHOTTKY BARRIER AK04V0
D1202		————	D2WT011E10	DIODE SILICON 11E1-EIC
D1252		————	D1VT001330	DIODE,SILICON 1SS133T-77
D2801	D1VT001330	DIODE,SILICON 1SS133T-77		DEL
D4204	D97U01201B	DIODE,ZENER MTZJ12B T-77		DEL
IC601	I0WDE2248C	IC STV2248C	I0WDE2246E	IC STV2246E
IC1201		————	ICKF0310A0	IC ET-TVT0310A
IC1202		————	I0UF012310	IC MM1231XF
IC2801	I03F00100M	IC LA70100M-MPB		DEL
Q302	TNAAB05003	COMPOUND TRANSISTOR KRC102SRTK		DEL
Q603	T8AA03881S	TRANSISTOR SILICON KTC3881S-RTK		DEL
Q604	T8AA03881S	TRANSISTOR SILICON KTC3881S-RTK		DEL
Q605	T8YJ2412K0	TRANSISTOR SILICON 2SC2412KT146 R,S		DEL
Q606	TNAAC05002	COMPOUND TRANSISTOR KRC103SRTK		DEL
Q608		————	TCAA3875SY	TRANSISTOR SILICON KTC3875S_Y_RTK
Q1101		————	TDAT00863Y	TRANSISTOR SILICON KTD863_Y-AT
Q1104		————	TCAA3875SY	TRANSISTOR SILICON KTC3875S_Y_RTK
Q1253		————	TCAA3875SY	TRANSISTOR SILICON KTC3875S_Y_RTK
Q1262		————	TCAA3875SY	TRANSISTOR SILICON KTC3875S_Y_RTK
Q2803		————	TNAAB05003	COMPOUND TRANSISTOR KRC102SRTK
Q2804	TCAA3875SY	TRANSISTOR SILICON KTC3875S_Y_RTK		DEL
Q2806	TCAA3875SY	TRANSISTOR SILICON KTC3875S_Y_RTK		DEL
L603		————	0216A6680K	COIL 68 UH
L605		————	0216S12R2J	COIL 2.2 UH
L606	0216A61R0K	COIL 1 UH	0216A62R2K	COIL 2.2 UH
L607	0216A6R22K	COIL 0.22 UH	0216A62R2K	COIL 2.2 UH
L608	021LA6100K	COIL 10 UH	0216A6180K	COIL 18 UH
L801	021673221K	COIL 220 UH		DEL

ELECTRICAL REPLACEMENT PARTS LIST

REF. NO.	MD20X		COMBI 3602 SI	
	PART NO.	DESCRIPTION	PART NO.	DESCRIPTION
R352	R903N8562J	RC 5.6K OHM 1/8W	R903N8682J	RC 6.8K OHM 1/8W
R361	R903N8332J	RC 3.3K OHM 1/8W	R903N8222J	RC 2.2K OHM 1/8W
R604	R903N8271J	RC 270 OHM 1/8W	R903N8221J	RC 220 OHM 1/8W
R609	R801R7121J	RC 120 OHM 1/10W	R801R7471J	RC 470 OHM 1/10W
R619	R903N8102J	RC 1K OHM 1/8W	R903N8821J	RC 820 OHM 1/8W
R620		———	R903N8681J	RC 680 OHM 1/8W
R623	R903N8561J	RC 560 OHM 1/8W	R903N8332J	RC 3.3K OHM 1/8W
R624	R801R7151J	RC 150 OHM 1/10W		DEL
R634	R801R7390J	RC 39 OHM 1/10W	R801R7470J	RC 47 OHM 1/10W
R649	R903N8821J	RC 820 OHM 1/8W	R903N8561J	RC 560 OHM 1/8W
R651	R002T2104J	RC 100K OHM 1/2W		DEL
R652	R002T2221J	RC 220 OHM 1/2W		DEL
R653	R903N8562J	RC 5.6K OHM 1/8W		DEL
R654	R903N8222J	RC 2.2K OHM 1/8W		DEL
R655	R903N8682J	RC 6.8K OHM 1/8W		DEL
R659	R903N8222J	RC 2.2K OHM 1/8W		DEL
R660	R903N8222J	RC 2.2K OHM 1/8W		DEL
R661	R002T4102J	RC 1K OHM 1/4W		DEL
R666	R903N8152J	RC 1.5K OHM 1/8W		DEL
R667	R903N8101J	RC 100 OHM 1/8W		DEL
R671	R903N8102J	RC 1K OHM 1/8W		DEL
R1009	R903N8182J	RC 1.8K OHM 1/8W	R903N8331J	RC 330 OHM 1/8W
R1012	R903N8182J	RC 1.8K OHM 1/8W	R903N8331J	RC 330 OHM 1/8W
R1054	R903N8182J	RC 1.8K OHM 1/8W	R903N8331J	RC 330 OHM 1/8W
R1072	R903N8271J	RC 270 OHM 1/8W	R903N8681J	RC 680 OHM 1/8W
R1073	R903N8271J	RC 270 OHM 1/8W	R903N8681J	RC 680 OHM 1/8W
R1074	R903N8271J	RC 270 OHM 1/8W	R903N8681J	RC 680 OHM 1/8W
R1108		———	R903N8821J	RC 820 OHM 1/8W
R1115		———	R903N8152J	RC 1.5K OHM 1/8W
R1117		———	R903N8680J	RC 68 OHM 1/8W
R1118		———	R903N8222J	RC 2.2K OHM 1/8W
R1119		———	R903N8221J	RC 220 OHM 1/8W
R1120		———	R903N8102J	RC 1K OHM 1/8W
R1202		———	R903N8102J	RC 1K OHM 1/8W
R1203		———	R903N8102J	RC 1K OHM 1/8W
R1204		———	R903N8151J	RC 150 OHM 1/8W
R1206		———	R903N8101J	RC 100 OHM 1/8W
R1207		———	R903N8103J	RC 10K OHM 1/8W
R1209		———	R903N8271J	RC 270 OHM 1/8W
R1211		———	R903N8472J	RC 4.7K OHM 1/8W
R1212		———	R903N8122J	RC 1.2K OHM 1/8W
R1213		———	R903N8122J	RC 1.2K OHM 1/8W
R1214		———	R903N8122J	RC 1.2K OHM 1/8W
R1251		———	R903N8101J	RC 100 OHM 1/8W

ELECTRICAL REPLACEMENT PARTS LIST

REF. NO.	MD20X		COMBI 3602 SI	
	PART NO.	DESCRIPTION	PART NO.	DESCRIPTION
R1253		———	R903N8223J	RC 22K OHM 1/8W
R1254		———	R903N8473J	RC 47K OHM 1/8W
R1255		———	R903N8121J	RC 120 OHM 1/8W
R1256		———	R903N8101J	RC 100 OHM 1/8W
R1262		———	R903N8102J	RC 1K OHM 1/8W
R1272		———	R903N8103J	RC 10K OHM 1/8W
R1280		———	R903N8101J	RC 100 OHM 1/8W
R1289		———	R903N8332J	RC 3.3K OHM 1/8W
R2804	R903N8272J	RC 2.7K OHM 1/8W		DEL
R2806	R002T4222J	RC 2.2K OHM 1/4W		DEL
R2807	R903N8222J	RC 2.2K OHM 1/8W		DEL
R2819	R903N8181J	RC 180 OHM 1/8W		DEL
R2820	R903N8681J	RC 680 OHM 1/8W		DEL
R2822	R903N8102J	RC 1K OHM 1/8W		DEL
R2824	R903N8153J	RC 15K OHM 1/8W		DEL
R2826	R903N8182J	RC 1.8K OHM 1/8W		DEL
R2827	R903N8103J	RC 10K OHM 1/8W		DEL
R2829	R903N8102J	RC 1K OHM 1/8W		DEL
R2831	R002T4102J	RC 1K OHM 1/4W		DEL
R2832	R903N8102J	RC 1K OHM 1/8W		DEL
R4029	R801R7332J	RC 3.3K OHM 1/10W		DEL
R4031		———	R903N8105J	RC 1M OHM 1/8W
R4101	R903N8122J	RC 1.2K OHM 1/8W	R903N8152J	RC 1.5K OHM 1/8W
R4105	R903N8223J	RC 22K OHM 1/8W		DEL
R4129		———	R801R7106J	RC 10M OHM 1/10W
R4209	R0X1X6333J	RC 33K OHM 1/6W	R0X1X6563J	RC 56K OHM 1/6W
C361	CS0RB0413K	CC 0.001 UF 50V B	CS0RB04N3K	CC 0.0039UF 50V B
C407	CQGTB0415K	CC 0.1 UF 50V B		DEL
C415	CQGTB0415K	CC 0.1 UF 50V B		DEL
C626	E50HU0470M	CE 47 UF 6.3V	E50HU5010M	CE 1 UF 50V
C628	CS0RB0315K	CC 0.1 UF 25V B		DEL
C629	CS0RF0316Z	CC 1 UF 25V F		DEL
C634	CS0RB0413K	CC 0.001 UF 50V B	CS0RB0414K	CC 0.01 UF 50V B
C639	CS0RB0414K	CC 0.01 UF 50V B		DEL
C644	CS0RB04H3K	CC 0.0022UF 50V B	CS0RB0414K	CC 0.01 UF 50V B
C646	CS0RB04Q4K	CC 0.047 UF 50V B	CS0RB04H4K	CC 0.022 UF 50V B
C672	CS0RB0315K	CC 0.1 UF 25V B		DEL
C673	CQGTCH413J	CC 0.001 UF 50V CH		DEL
C674	CS0RCH4S1J	CC 56 PF 50V CH		DEL
C679	CS0RCH4E2J	CC 150 PF 50V CH		DEL
C680	CS0RB0413K	CC 0.001 UF 50V B		DEL
C681		———	CHG0F0415Z	CC 0.1 UF 50V F
C1020		———	CS0RCH4G2J	CC 180 PF 50V CH
C1031		———	CS0RCH4G2J	CC 180 PF 50V CH

SPEC.NO.	M5E4-48I
O/R NO.	K355522

Zentralwerkstatt und
Ersatzteildepot
für ORION-Produkte

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Service & Versand GmbH

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63303 Dreieich

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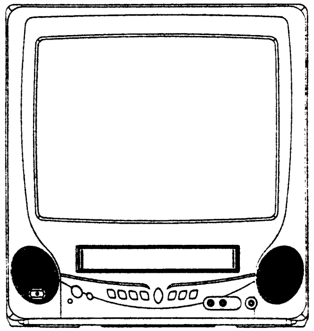
SERVICE MANUAL

Nachdruck bzw. Kopieren dieser Unterlagen ist grundsätzlich verboten!

ORION

COMBI 3602 SI

COLOR TELEVISION/VIDEO CASSETTE RECORDER



VHS
PAL

SUPPLEMENT
CHASSIS CODE A

This SUPPLEMENT must be used together SERVICE MANUAL for MD20X.
All other test and repair procedures are as shown in the ORIGINAL MANUAL.
Please file this SUPPLEMENT with the ORIGINAL VERSIONS.

Best. Nr. SM3602

Design and specifications are subject to change without notice.

ELECTRICAL REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	
TRANSISTORS			
Q2804	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q2806	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q4001	TCAT032034	TRANSISTOR, SILICON	KTC3203_Y-AT
Q4002	TCAT032034	TRANSISTOR, SILICON	KTC3203_Y-AT
Q4005	TPAAC05002	COMPOUND TRANSISTOR	KRA103SRTK
Q4006	TCATC31980	TRANSISTOR,SILICON	KTC3198-AT(Y,GR)
Q4007	TCATC31980	TRANSISTOR,SILICON	KTC3198-AT(Y,GR)
Q4106	T6YJ1037K0	TRANSISTOR,SILICON	2SA1037AKT146R,S
Q4107	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q4118	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q4202	T6YJ1037K0	TRANSISTOR,SILICON	2SA1037AKT146R,S
Q4205	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q4207	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q4210	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
COILS &TRANSFORMERS			
L401	021679472K	COIL	4.7 MH
L402	022800033A	COIL,LINEARITY	20416A
L501	02AHB0A0A4	CORE,FERRITE	W5T_20*10*10A
⚠ L501	029T0000A1	COIL,LINE FILTER	0R7A223F24
⚠ L502	029T000092	COIL,LINE FILTER	1R0A103F24
⚠ L503	028R140018	COIL,DEGAUSS	8R140018
L602	021375101K	COIL	100 UH
L604	021673101K	COIL	100 UH
L606	0216A61R0K	COIL	1 UH
L607	0216A6R22K	COIL	0.22 UH
L608	021LA6100K	COIL	10 UH
L610	021673101K	COIL	100 UH
L611	021673101K	COIL	100 UH
L612	033700005R	COIL,VIDEO IFT	3700005
L613	02167F101J	COIL	100 UH
L614	0216A6100K	COIL	10 UH
L801	021673221K	COIL	220 UH
L1001	0216A6120K	COIL	12 UH
L1002	0216A6100K	COIL	10 UH
L2801	02167F470J	COIL	47 UH
L2804	0216A6680K	COIL	68 UH
L2806	0216A6101K	COIL	100 UH
L4003	031616003R	COIL,BIAS OSC	1616003
L4005	02167F101J	COIL	100 UH
L4006	02167F101J	COIL	100 UH
L4007	0216A6820K	COIL	82 UH
L4008	02167F101J	COIL	100 UH
L4009	02167F101J	COIL	100 UH
L4010	0216A6120K	COIL	12 UH
L4011	0216A6390K	COIL	39 UH
L4012	02167F101J	COIL	100 UH
L4101	032623004T	COIL TRAP	STP-01064
L4102	02167F101J	COIL	100 UH
L4108	021673102K	COIL	1 MH
L4202	021673101K	COIL	100 UH
L4203	0216A6100K	COIL	10 UH
L4204	0216A6100K	COIL	10 UH
T401	045009003J	TRANS,HORIZONTAL DRIVE	ETH09K14BZ
⚠ T501	0481290794	TRANSFORMER,SWITCHING	81290794
JACKS			
⚠ J801	066F120018	SOCKET,CATHODE RAY TUBE	ISMS01S
J2201	060J131015	HEADPHONE JACK	MSJ-2000
J2202	060Q401076	RCA JACK	AV1-09D-4
J2203	060Q401077	RCA JACK	AV1-09D-3
J4201	063G100042	SOCKET,21PIN	0350_9982_05
SWITCHES			
SW501	0530105018	SWITCH	ESB92S23B
SW1001	0508S11001	SWITCH (LEAF)	LSA-1144EAU
SW2201	0504101T34	SWITCH,TACT	EVQ21505R
SW2202	0504101T34	SWITCH,TACT	EVQ21505R
SW2203	0504101T34	SWITCH,TACT	EVQ21505R
SW2204	0504101T34	SWITCH,TACT	EVQ21505R
SW2205	0504101T34	SWITCH,TACT	EVQ21505R
SW2206	0504101T34	SWITCH,TACT	EVQ21505R
SW2207	0504101T34	SWITCH,TACT	EVQ21505R
SW2208	0504101T34	SWITCH,TACT	EVQ21505R
SW2209	0504101T34	SWITCH,TACT	EVQ21505R
SW2210	0504101T34	SWITCH,TACT	EVQ21505R
VARIABLE RESISTORS			
VR401	V1K62Q2BT8	VOLUME,SEMI FIXED	NVG6THTB471
VR402	V1K62H3BT8	VOLUME,SEMI FIXED	NVG6THTB222

REF. NO.	PART NO.	DESCRIPTION	
VARIABLE RESISTORS			
VR502	V1163Q2BTC	VOLUME,SEMI FIXED	EVNCYAA03BQ2 or
	V1263Q2BTC	VOLUME,SEMI FIXED	RH063MCS2R
P.C.BOARD ASSEMBLIES			
PCB010	A5E448I010	PCB ASS'Y	VMB290A
PCB020	A5E415G020	PCB ASS'Y	VPA150A
PCB110	A5E415G110	PCB ASS'Y	TCB419A
PCB340	A5E415G340	PCB ASS'Y	TEBB08A
MISCELLANEOUS			
B402	024HT03553	CORE,BEADS	W5RH3.5X5X1.0
B501	024HT03553	CORE,BEADS	W5RH3.5X5X1.0
B502	024HT03563	CORE,BEADS	W4BRH3.5X6X1.0X2
B505	024HT03563	CORE,BEADS	W4BRH3.5X6X1.0X2
B602	024HT03564	CORE,BEADS	W4BRH3.5X6X1.0
B1001	024HT03553	CORE,BEADS	W5RH3.5X5X1.0
B1002	024HT03553	CORE,BEADS	W5RH3.5X5X1.0
B2201	024HT03553	CORE,BEADS	W5RH3.5X5X1.0
B2202	024HT03553	CORE,BEADS	W5RH3.5X5X1.0
B2203	024HT03553	CORE,BEADS	W5RH3.5X5X1.0
B4001	024HT03553	CORE,BEADS	W5RH3.5X5X1.0
B4201	024HT03564	CORE,BEADS	W4BRH3.5X6X1.0
B4202	024HT03564	CORE,BEADS	W4BRH3.5X6X1.0
BT101	1412004008	BATTERY,MANGAN	R03(AB)E_2P_G
BT102	1412004008	BATTERY,MANGAN	R03(AB)E_2P_G
CD302	06CU12414A	CORD CONNECTOR	CU12414A
CD401	06CU251201	CORD CONNECTOR	CU251201
⚠ CD501	1206459803	CORD AC BUSH	6459803
CD502	06CUU23001	CORD CONNECTOR	CUU23001
CD602	06CH01388A	CORD EIS CONNECTOR	CH01388A
CD801	06CU82039A	CORD CONNECTOR	SM1098-009-1A
CD851	06CU2B1201	CORD CONNECTOR	CU2B1201
CD852	WDL6036038	FLAT CABLE AWM2468	AWG26 6C BLACK 360MM
CD853	WCL6830038	FLAT CABLE AWM2468	AWG26 5C GRAY 300MM
CF601	102E038R9B	FILTER,SAW	K3953M
CF602	102E238R94	FILTER,SAW	K9650M
CF603	1012T03101	FILTER CERAMIC TRAP	MKT31.9MA110P-TF
CF604	1012T04001	FILTER,CERAMIC TRAP	MKT40.4MA110P-TF
CF605	1012T5R507	FILTER CERAMIC TRAP	TPWA02B-TF21
CP302	069W120029	CONNECTOR PCB SIDE	TID-X02P-M1
CP402	069S450089	CONNECTOR PCB SIDE	A1561WV2-A5P
CP501	069S320419	CONNECTOR PCB SIDE	A3963WV2-3PD
CP502	069S420110	CONNECTOR PCB SIDE	A1561WV2-2P
CP603	069X160379	CONNECTOR PCB SIDE	06JQ-ST
CP801	069S320010	CONNECTOR PCB SIDE	A2361WV2-2P
CD4005	122S061401	CORD JUMPER	1.25X6X138XC
CP1001	06972C0010	CONNECTOR PCB SIDE	TMC-J12P-B2
CP4001	0697240600	CONNECTOR PCB SIDE	TOC-C04X-B1
CP4004	067U002019	WIRE HOLDER	B2013H02-2P
CP4005	069J760029	CONNECTOR PCB SIDE	IMSA-9604S-06Z14
CP401A	069S250629	CONNECTOR PCB SIDE	A2001WV2-5P
CP401B	067U005049	WIRE HOLDER	B2013H02-5P
CP851A	069S2B0629	CONNECTOR PCB SIDE	A2001WV2-11P
CP851B	067U011029	WIRE HOLDER	B2013H02-11P
CP852A	067U006049	WIRE HOLDER	B2013H02-6P
CP852B	067U006049	WIRE HOLDER	B2013H02-6P
CP853A	067U005049	WIRE HOLDER	B2013H02-5P
CP853B	067U005049	WIRE HOLDER	B2013H02-5P
CUS012	800WFAA007	CUSHION B	
CUS013	800WFAA008	CUSHION C	
EL001	124120301A	EYE LET	XRY20X30BD
⚠ F501	080NT04004	FUSE	50T040H
⚠ FB401	043214037F	TRANSFORMER,FLYBACK	FNI-14B001
FH501	06710T0006	HOLDER,FUSE	EYF-52BC
FH502	06710T0006	HOLDER,FUSE	EYF-52BC
OS2201	077Q004017	REMOTE RECEIVER	PIC-37243SR
SP352	070C533019	SPEAKER	SG04D11BNA
⚠ TH501	D8E080B100	DEGAUSS ELEMENT	B59104-T80-B10
TM101	076R0CH740	TRANSMITTER	R25-1918
⚠ TU601	0145517007	TUNER,VHF-UHF	TUWRF4EG-778F2A
⚠ V801	098Y1404B9	CRT W/DY	A34JXV70X53N45
X601	100CT4R408	CRYSTAL	HC-49/U
X1001	100CT01002	CRYSTAL	HC-49/U-S
X1002	100DA32R01	CRYSTAL	DT-26
X4001	100DT4R410	CRYSTAL	AT-49

ELECTRICAL REPLACEMENT PARTS LIST

RESISTOR
RC.................. CARBON RESISTOR

CAPACITORS
CC.................. CERAMIC CAPACITOR
CE.................. ALUMI ELECTROLYTIC CAPACITOR
CP.................. POLYESTER CAPACITOR
CPP.................. POLYPROPYLENE CAPACITOR
CPL.................. PLASTIC CAPACITOR
CMP.................. METAL POLYESTER CAPACITOR
CMPL................ METAL PLASTIC CAPACITOR
CMPP............... METAL POLYPROPYLENE CAPACITOR

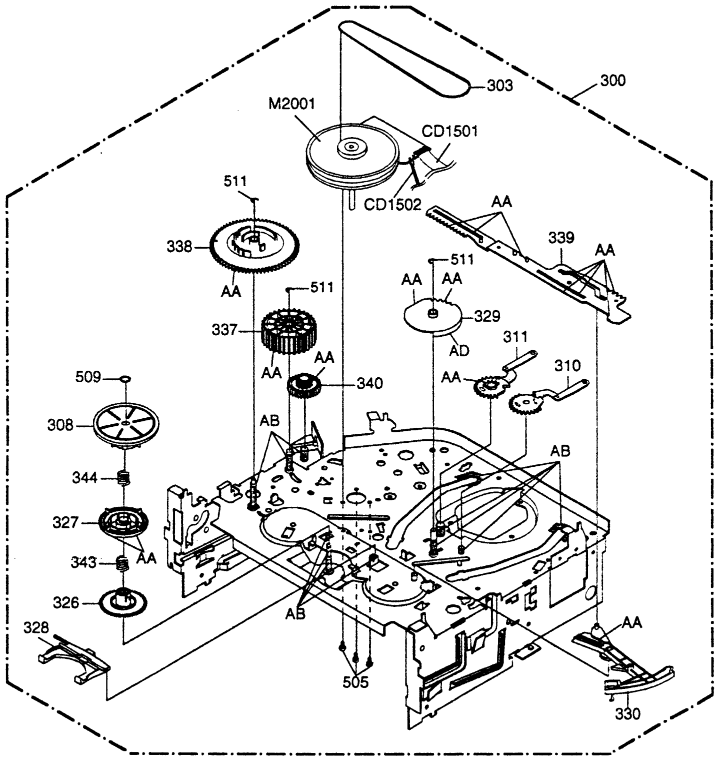
CHASSIS REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	
300	A5E415A420K	DECK ASS'Y	A5E415A420K
301	85OA400234	PINCH ROLLER BLOCK	
302	85OP900746	BRACKET,TOP 3V	
303	85OP200290	BELT,CAPSTAN (S)	
304	85OP600581	WORM	
305	85OP500083	BASE,AC HEAD	
306	85OP800324	SPRING,AC HEAD	
307	85OA000459	MAIN CHASSIS ASS'Y	
308	85OA200089	CLUTCH ASS'Y	
309	85OA200090	ARM IDLER ASS'Y	
310	85OA300065	LOADING ARM S UNIT	
311	85OA300066	LOADING ARM T UNIT	
312	85OA400223	INCLINED BASE T UINT 3S	
313	85OA400232	P5 ARM ASS'Y 2	
314	85OA400235	TENSION ARM ASS'Y 2	
315	85OA400231	INCLINED BASE S UNIT	
316	85OP800367	SPRING LOCKER	
317	85OP900736	CASS,HOLDER	
318	85OP900748	CASS,SIDE L	
319	85OP900749	CASS,SIDE R	
320	85OP900739	LOCKER,R	
321	85OA900228	LINK UNIT	
322	85OP000496	POST,CASS GUIDE	
323	85OP200316	REEL,S (S)	
324	85OP200317	REEL,T (S)	
325	85OP200308	GEAR,IDLER	
326	85OP200311	GEAR,CLUTCH	
327	85OP200312	GEAR,COUPLING	
328	85OP200313	LEVER,CLUTCH	
329	85OP300194	GEAR,MAIN LOADING	
330	85OP400490	LEVER,TENSION	
331	85OP400492	HOLDER,TENSION	
332	85OP400520	CAP.P4	
333	85OP400542	BAND,TENSION	
334	85OP400533	CONNECT,TENSION	
335	85OP600573	ARM,BRAKE T	
336	85OP600584	BAND,BRAKE T	
337	85OP600577	CAM,PINCH ROLLER	
338	85OP600578	CAM,MAIN	
339	85OP600579	ROD,MAIN	
340	85OP600582	GEAR,JOINT	
341	85OP800322	SPRING,TENSION	
342	85OP800360	SPRING,BRAKE T	
343	85OP800355	SPRING,COUPLING	
344	85OP800356	SPRING,RING	
345	85OP900750	LEVER,LINK 2	
346	85OP900744	LEVER,FLAP	
347	85OP900745	CASS,OPENER	
348	85OP700035	REFLECTOR,LED	
349	85OP700039	COVER,BOT	
501	8107226804	SCREW,TAP TITE(S) BIND	2.6x8
502	810A123504	SEMS A	M2.3x5.0
503	8107226404	SCREW,TAP TITE(S) BIND	2.6x4
504	8102120604	SCREW,PAN	M2x6
505	8109126604	SCREW,TAP TITE(B) PAN	2.6x6
506	810A130404	SCREW/WASHER(A)	M3x4
507	810A126504	SCREW/WASHER(A)	M2.6x5
508	82Q264713N	POLYSLIDER WASHER	2.6x4.7xT0.13
509	82P184505N	POLYSLIDER WASHER(CUT)	1.8x4.5xT0.5
510	8107226604	SCREW,TAP TITE(S) BIND	2.6x6
511	83ETW30000	E-RING	3
CD1501	122H071704	CORD JUMPER	2H071704
CD1502	122Y021902	CORD JUMPER	2Y021902
H5001	1523Q91003	HEAD (AUDIO CONTROL)	VTR-1X2RPE22-756
H5002	1543Q02014	HEAD (FULL ERASE)	VTR-1X2ERS11-154
⚠ M101	1596S98001	MOTOR (LOADING)	MDB2B66
⚠ M2001	1510S98038	CAPSTAN DD UNIT	F2QVB33
⚠ M2003	1589S11014	MICRO MOTOR	I2OAL03
⚠ UN4001	A4F310B500	CYLINDER UNIT ASS'Y	A4F310B500

ELECTRICAL REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	
RESISTORS			
⚠ R356	R3X28B3R9J	R,METAL	3.9 OHM 3W
⚠ R430	R3X28B221J	R.METAL	220 OHM 3W
⚠ R447	R65582101J	R,FUSE	100 OHM 1/2W
⚠ R448	R3X181102J	R,METAL OXIDE	1K OHM 1W
⚠ R450	R6558A5R6J	R,FUSE	5.6 OHM 2W
⚠ R501	R5X2CD2R2J	R,CEMENT	2.2 OHM 5W
⚠ R505	R63581R22J	R,FUSE	0.22 OHM 1W
⚠ R538	R034K2155J	RC	1.5M OHM 1/2W
⚠ R542	R3X181R27J	R,METAL OXIDE	0.27 OHM 1W
⚠ R543	R635U4681J	R,FUSE	680 OHM 1/4W
⚠ R803	R3X18A153J	R,METAL OXIDE	15K OHM 2W
⚠ R805	R3X18A153J	R,METAL OXIDE	15K OHM 2W
R807	R3X18A153J	R,METAL OXIDE	15K OHM 2W
R4035	R00106564J	RC	560K OHM 1/6W or
	R001T6564J	RC	560K OHM 1/6W or
	R002T4564J	RC	560K OHM 1/4W
CAPACITORS			
C357	E02LF3102M	CE	1000 UF 25V
C405	E5EZF3222M	CE	2200 UF 25V
C421	E5EZF4102M	CE	1000 UF 35V
C423	P4J7F3334J	CMPP	0.33 UF 250V PMS
C424	P4N8FJ822H	CMPP	0.0082UF 1.25KV
C450	C0PLRR7H2K	CC	220 PF 2KV R
C501	C03L0R7Q2K	CC	470 PF 2KV R
C502	C13HB07H3K	CC	0.0022UF 2KV B
C503	C13HB07H3K	CC	0.0022UF 2KV B
⚠ C505	P2122B224M	CMP	0.22 UF 275V ECQUL
⚠ C506	P2122B104M	CMP	0.1 UF 275V ECQUL
C507	E52DHH151M	CE	150 UF 400V
⚠ C510	E02LU4101M	CE	100 UF 35V
C517	C03L0R7H3K	CC	0.0022UF 2KV R
C521	E62NFC221M	CE	220 UF 200V
C523	E5EZF3222M	CE	2200 UF 25V
C524	E5EZF3102M	CE	1000 UF 25V
⚠ C529	CD39E0MH3M	CC	0.0022UF 250V
⚠ C530	CD39E0M13M	CC	0.001 UF 250V
C531	E5EZF2222M	CE	2200 UF 16V
C532	C03L0R7E3K	CC	0.0015UF 2KV R
C535	C03L0R7B3K	CC	0.0012UF 2KV R
C802	C0JBB07H3K	CC	0.0022UF 2KV B
C1003	E51A0P104Z	CE	0.1 F 5.5V
C1051	CHG0B0413K	CC	0.001 UF 50V B
C4085	CHG0B0412K	CC	100 PF 50V B or
	CHGTB0412K	CC	100 PF 50V B
C4103	CHG0F0415Z	CC	0.1 UF 50V F
DIODES			
D302	D97X06R81B	DIODE,ZENER	MTZJ6.8B T-72 or
	D97U06R81B	DIODE,ZENER	MTZJ6.8B T-77
D403	D2WT011E10	DIODE SILICON	11E1-EIC
D404	D2WT011E10	DIODE SILICON	11E1-EIC
D405	D2WT011E10	DIODE SILICON	11E1-EIC
D406	D2WT011E10	DIODE SILICON	11E1-EIC
D407	D2WT011E10	DIODE SILICON	11E1-EIC
D411	D2WXN49370	DIODE SILICON	1N4937
D413	D2WXN49370	DIODE SILICON	1N4937
⚠ D501	D2WTRM11C0	DIODE SILICON	RM11C-EIC
⚠ D502	D2WTRM11C0	DIODE SILICON	RM11C-EIC
⚠ D503	D2WTRM11C0	DIODE SILICON	RM11C-EIC
⚠ D504	D2WTRM11C0	DIODE SILICON	RM11C-EIC
D505	D28T21DQN9	DIODE SCHOTTKY	21DQ09N-TA2B1
D506	D2WXN49370	DIODE SILICON	1N4937
D508	D2WXRU2AM0	DIODE SILICON	RU2AM-EIC
D509	D28T21DQN9	DIODE SCHOTTKY	21DQ09N-TA2B1
D510	D2WXRU2AM0	DIODE SILICON	RU2AM-EIC
D511	D2WXN49370	DIODE SILICON	1N4937
D512	D28T21DQN9	DIODE SCHOTTKY	21DQ09N-TA2B1
D513	D1VT001330	DIODE,SILICON	1SS133T-77
D515	D97U01501B	DIODE,ZENER	MTZJ15B T-77
D518	D1VT001330	DIODE,SILICON	1SS133T-77
D519	D28T21DQN9	DIODE SCHOTTKY	21DQ09N-TA2B1
D520	D2WXSB1400	DIODE SCHOTTKY	SB140-EIC
D521	D1VT001330	DIODE,SILICON	1SS133T-77
D522	D2WXSB1400	DIODE SCHOTTKY	SB140-EIC
D523	D97U06R81B	DIODE,ZENER	MTZJ6.8B T-77
D526	D1VT001330	DIODE,SILICON	1SS133T-77
D528	D97U05R61B	DIODE,ZENER	MTZJ5.6B T-77
D533	D1VT001330	DIODE,SILICON	1SS133T-77
DIODES			
D534	D1VT001330	DIODE,SILICON	1SS133T-77
D535	D1VT001330	DIODE,SILICON	1SS133T-77
D601	D97U03301B	DIODE,ZENER	MTZJ33B T-77
D602	D2WT011E10	DIODE SILICON	11E1-EIC
D603	D2WT011E10	DIODE SILICON	11E1-EIC
D604	DD1R0MA770	DIODE,SILICON	MA77
D606	D97U08R21B	DIODE,ZENER	MTZJ8.2B T-77
D607	D97U08R21B	DIODE,ZENER	MTZJ8.2B T-77
D608	D97U08R21B	DIODE,ZENER	MTZJ8.2B T-77
D801	D1VT001330	DIODE,SILICON	1SS133T-77
D802	D1VT001330	DIODE,SILICON	1SS133T-77
D803	D1VT001330	DIODE,SILICON	1SS133T-77
D1001	D1VTB721Q0	DIODE SCHOTTKY	RB721Q-40 T-77
D1002	D2WT011E10	DIODE SILICON	11E1-EIC
D1003	0010E00330	INFRARED LED	LTE-3271T-012A-O
D1004	D1VT001330	DIODE,SILICON	1SS133T-77
D1005	D1VT001330	DIODE,SILICON	1SS133T-77
D1006	D2WXSB1400	DIODE SCHOTTKY	SB140-EIC
D1009	D1VT001330	DIODE,SILICON	1SS133T-77
D1010	D2WXSB1400	DIODE SCHOTTKY	SB140-EIC
D1021	D1VT001330	DIODE,SILICON	1SS133T-77
D1261	D1VT001330	DIODE,SILICON	1SS133T-77
D2201	0021721150	LED	SLR-342VCT32
D2202	0021721150	LED	SLR-342VCT32
D2203	0021721150	LED	SLR-342VCT32
D2801	D1VT001330	DIODE,SILICON	1SS133T-77
D4001	D1VT001330	DIODE,SILICON	1SS133T-77
D4204	D97U01201B	DIODE,ZENER	MTZJ12B T-77
D4210	D1VT001330	DIODE,SILICON	1SS133T-77
ICS			
IC351	I01DP75110	IC	AN7511
IC401	I0WTD81740	IC	TDA8174A
⚠ IC502	I2BTG66530	IC	STR-G6653
⚠ IC506	0002E00610	PHOTO COUPLER	LTV-817M-VB
IC601	I0WDE2248C	IC	STV2248C
IC1001	I1KA97805A	IC	KIA7805API
IC1003	I9UF032310	IC	PST3231NR
IC1004	I1KA97805A	IC	KIA7805API
IC1005	I1KA97805A	IC	KIA7805API
IC1006	I54F50134A	IC	OEC0134A
IC1007	I1KA97809A	IC	KIA7809API
IC1099	A5E415I015	IC	S-24C08AFJA-TB-01
IC2801	I03F00100M	IC	LA70100M-MPB
IC4001	I04F38225F	IC	HA118225F
TRANSISTORS			
Q302	TNAAB05003	COMPOUND TRANSISTOR	KRC102SRTK
Q403	T8YJ2412K0	TRANSISTOR SILICON	2SC2412KT146 R,S
Q405	TC5T01627Y	TRANSISTOR SILICON	2SC1627_Y(TPE2)
Q406	TD3U021400	TRANSISTOR SILICON	TT2140LS-CBC
Q507	TCATC31980	TRANSISTOR,SILICON	KTC3198-AT(Y,GR)
Q601	TPAAB05001	COMPOUND TRANSISTOR	KRA102SRTK
Q602	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q603	T8AA03881S	TRANSISTOR SILICON	KTC3881S-RTK
Q604	T8AA03881S	TRANSISTOR SILICON	KTC3881S-RTK
Q605	T8YJ2412K0	TRANSISTOR SILICON	2SC2412KT146 R,S
Q606	TNAAC05002	COMPOUND TRANSISTOR	KRC103SRTK
Q607	TC3T030000	TRANSISTOR,SILICON	2SC3000-AA
Q609	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q611	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q804	TCA0042170	TRANSISTOR SILICON	KTC4217(O,Y)
Q805	TCA0042170	TRANSISTOR SILICON	KTC4217(O,Y)
Q806	TCA0042170	TRANSISTOR SILICON	KTC4217(O,Y)
Q1001	0002700690	PHOTO COUPLER	RPI-303
Q1002	TNAAC05002	COMPOUND TRANSISTOR	KRC103SRTK
Q1003	0002700680	PHOTO COUPLER	RPI-352C40N
Q1004	TNAAC05002	COMPOUND TRANSISTOR	KRC103SRTK
Q1005	0002700690	PHOTO COUPLER	RPI-303
Q1006	0000M00390	PHOTO TRANSISTOR	ST-304L
Q1007	T6YJ1037K0	TRANSISTOR,SILICON	2SA1037AKT146R,S
Q1008	TAAT01281Y	TRANSISTOR SILICON	KTA1281_Y
Q1009	0002700680	PHOTO COUPLER	RPI-352C40N
Q1010	TPAAC05002	COMPOUND TRANSISTOR	KRA103SRTK
Q1011	TNAAC05002	COMPOUND TRANSISTOR	KRC103SRTK
Q1012	TAAT01281Y	TRANSISTOR SILICON	KTA1281_Y
Q1015	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q1016	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q1017	0000M00390	PHOTO TRANSISTOR	ST-304L

CHASSIS EXPLODED VIEW (BOTTOM VIEW)



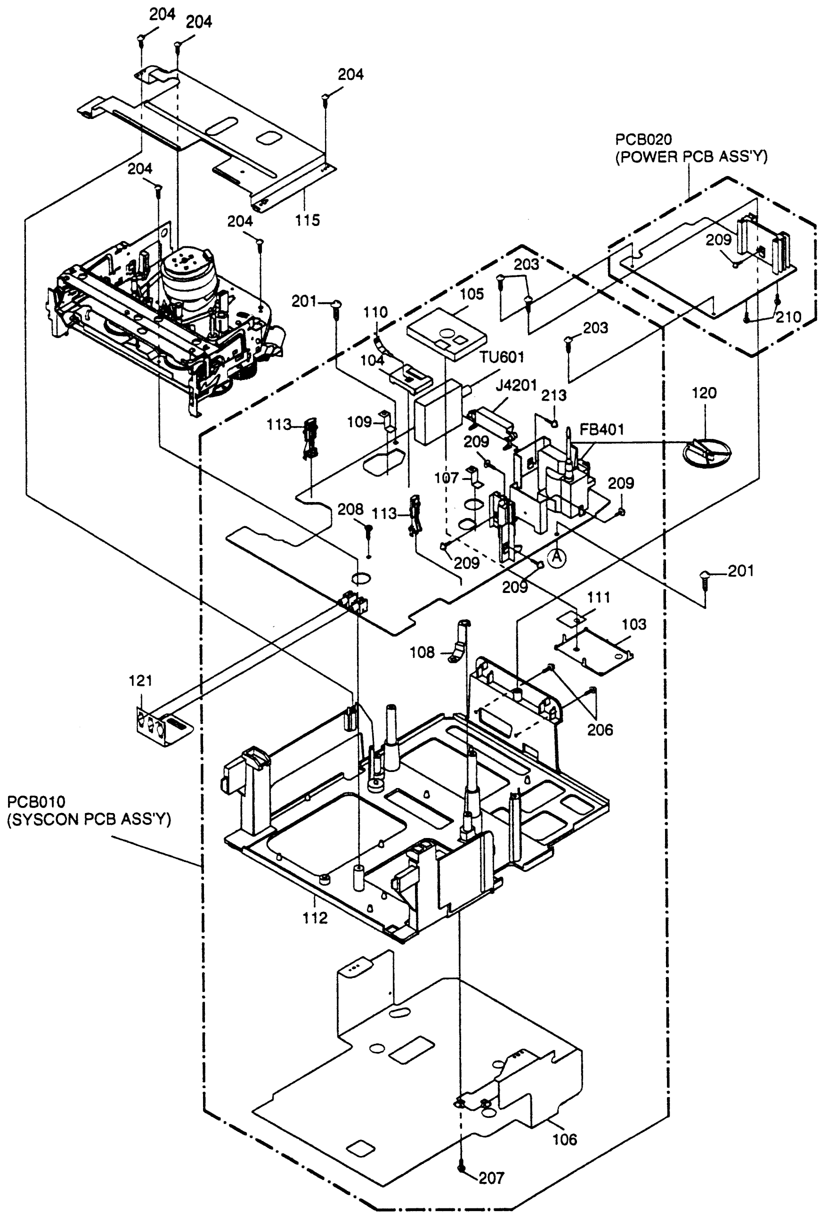
CLASS	PART NO.	MARK
GREASE	G-555G	AA
	MG-33	AB
	FG-84M	AC
	FL-721	AD

NOTE: Applying positions AA, AB, AC and AD for the grease are displayed for this section. Check if the correct grease is applied for each position.

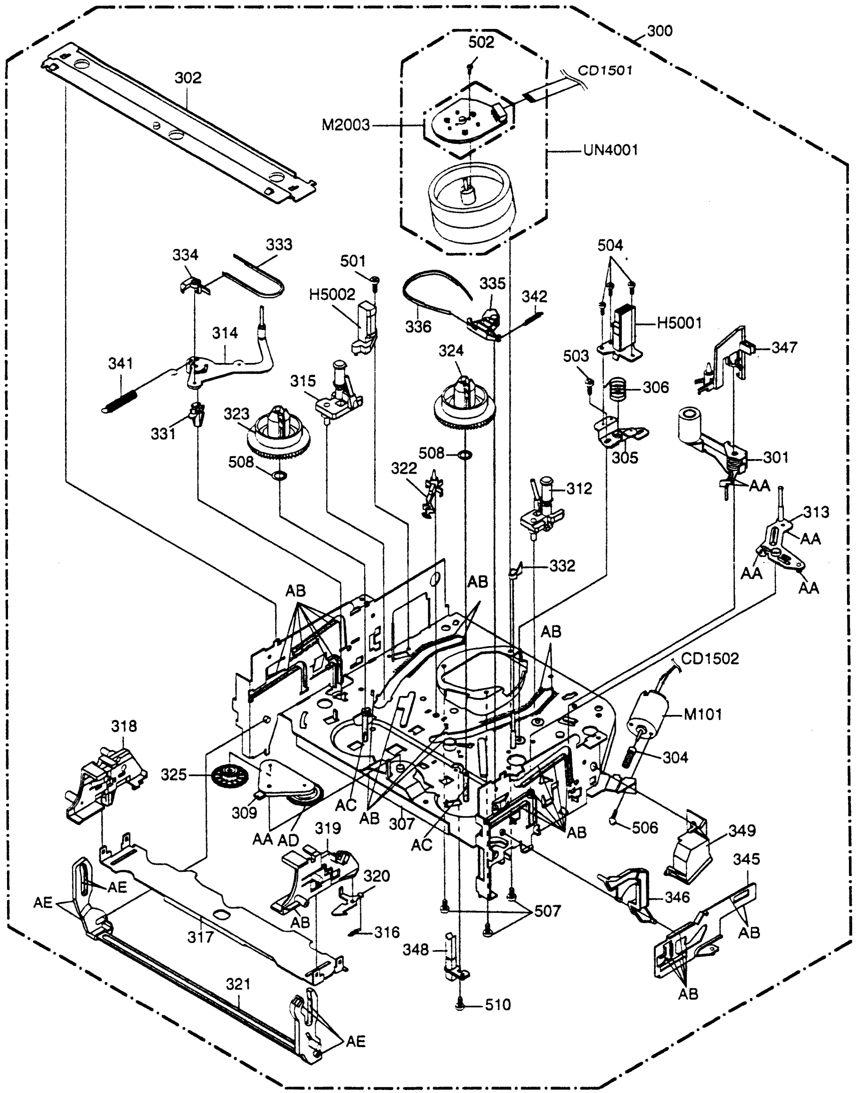
MECHANICAL REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION			
101	A5E448I720	CABINET,FRONT ASSY			
101A	701WPJC246	CABINET,FRONT			
101B	712WPJB794	FLAT,FLAP			
101C	713WPA0198	GLASS,LED			
101D	713WPA0199	GUIDE,REMOCON			
101E	735WPAA553	BUTTON,BASE			
101F	735WPBA725	BUTTON,FRAME			
101G	743WKA0037	SPRING,FLAP			
101H	711WPCA017	BADGE,BRAND			
102	A5E448I740	CABINET,BACK ASS'Y			
103	752WSA0149	SHIELD,COVER			
104	752WSA0230	SHIELD,CASE HEAD AMP			
105	752WSA0238	SHIELD,CASE			
106	752WSA0245	PLATE,SHIELD BOTTOM			
107	753WSA0118	PLATE,EARTH-SYSCON			
108	753WSA0120	PLATE,BOTTOM-EARTH			
109	753WSA0142	PLATE,EARTH-SYSCON			
110	753WUAA006	SPRING,EARTH HEAD AMP			
111	755WNA0010	SHEET,PVC			
112	761WPA0224	HOLDER,DECK			or
	761WPAA068	HOLDER,DECK			or
	761WPAA075	HOLDER,DECK			
113	85OP700038	HOLDER,END SENSOR			
114	752WSA0256	PLATE,POWER SW			
115	752WSAA054	PLATE,DECK SHIELD			
116	722202A720	SHEET,RATING			
117	735WPBA591	BUTTON,POWER			
118	741WUA0024	SPRING,EARTH			
119	800WR0A011	SHEET CRT SUPPORT (D)			
120	899HV3T000	HOLDER,ANODE WIRE			
121	752WSA0303	SHIELD,AV JACK			
201	8117540B04	SCREW,TAPPING(B0)	TRUSS	4x20	
202	8117540A64	SCREW,TAPPING(B0)	TRUSS	4x16	
203	8117540A04	SCREW,TAPPING(B0)	TRUSS	4x10	
204	8110630A24	SCREW,TAP TITE(P)	BRAZIER	3x12	
205	8110630A04	SCREW,TAP TITE(P)	BRAZIER	3x10	
206	8110630804	SCREW,TAP TITE(P)	BRAZIER	3x8	
207	8110630604	SCREW,TAP TITE(P)	BRAZIER	3x6	
208	8110330804	SCREW,TAP TITE(P)	FLAT	3x8	
209	8109I30A04	SCREW,TAP TITE(B)	WH7	3x10	
210	8109630802	SCREW,TAP TITE(B)	BRAZIER	3x8	
211	810A130504	SCREW/WASHER(A)		M3x5	
212	8121F50B84	SCREW,TAP TITE(P)	FAI20 FLAT	5x28	
213	8107630804	SCREW,TAP TITE(S)	BRAZIER	3x8	
—	791WHAA016	LAMIFILM BAG			
—	792WHA0362	PACKAGE,TOP			
—	792WHA0363	PACKAGE,BOTTOM			
—	793WCDB753	GIFT BOX			
—	JB5Z0300	POLYBAG,INSTRUCTION			
—	J5E44801A	INSTRUCTION BOOK(F)			
—	J5E44807A	QUICK SET-UP SHEET			
—	J5E44810A	INSTRUCTION BOOK(H)			
—	A5E448I975	INSTRUCTION BOOK KIT			

MECHANICAL EXPLODED VIEW


204
204
204
204
204
115
PCB020
(POWER PCB ASS'Y)
209
210
203
105
201
110
203
104
TU601
J4201
213
120
113
109
FB401
209
107
209
208
113
209
A
209
201
111
103
108
206
121
PCB010
(SYSCON PCB ASS'Y)
112
106
207

CHASSIS EXPLODED VIEW (TOP VIEW)


300
502
CD1501
302
M2003
UN4001
333
334
501
335
342
504
H5002
336
H5001
347
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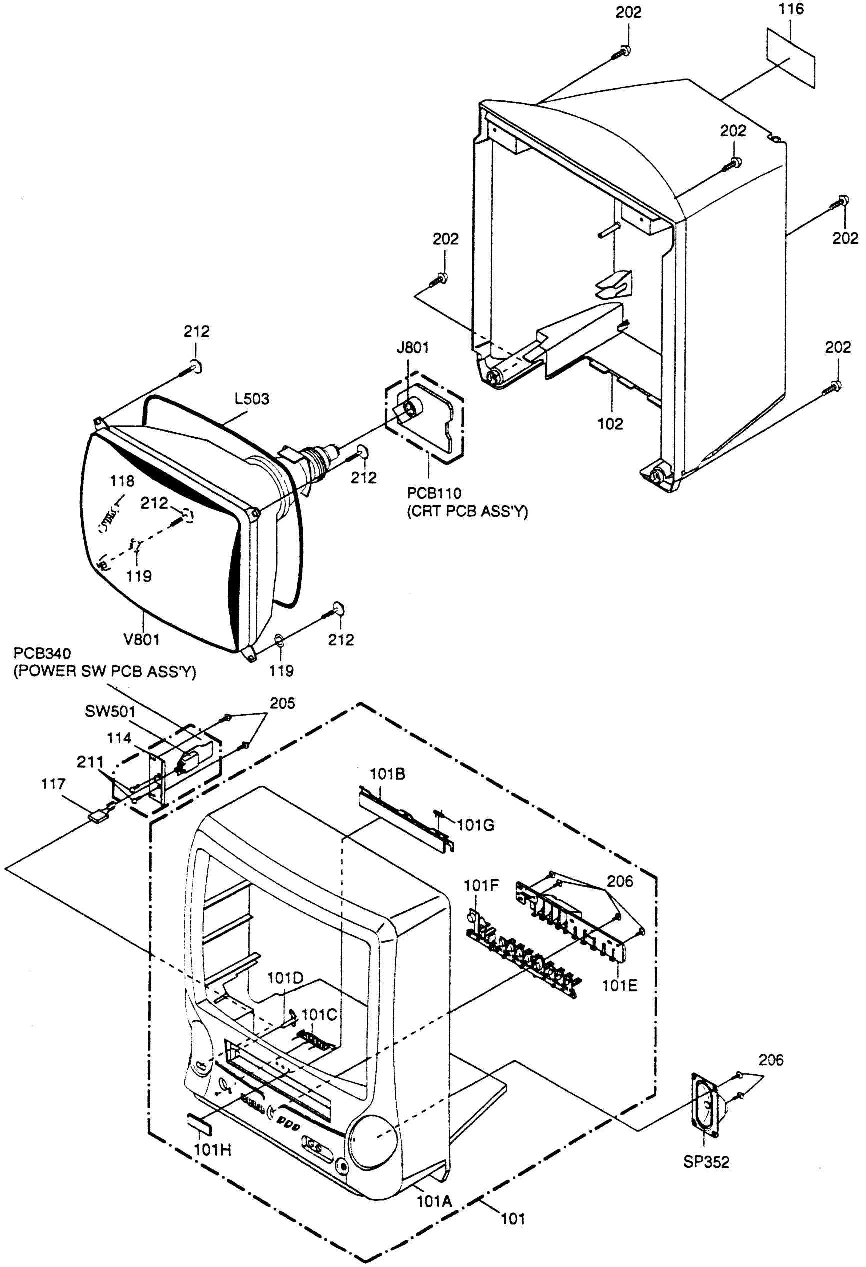
341
324
503
306
315
323
331
508
508
322
305
301
AA
312
313
AA
AA
AA
332
AB
AB
AB
CD1502
M101
318
304
325
309
AC
AB
307
AA AD
319
AC
AB
506
349
345
AE
320
346
AE
507
AB
316
317
348
AB
510
321
AE

CLASS	PART NO.	MARK
GREASE	G-555G	AA
	MG-33	AB
	FG-84M	AC
	FL-721	AD
	G-313Y	AE

NOTE: Applying positions AA, AB, AC, AD and AE for the grease are displayed for this section. Check if the correct grease is applied for each position.

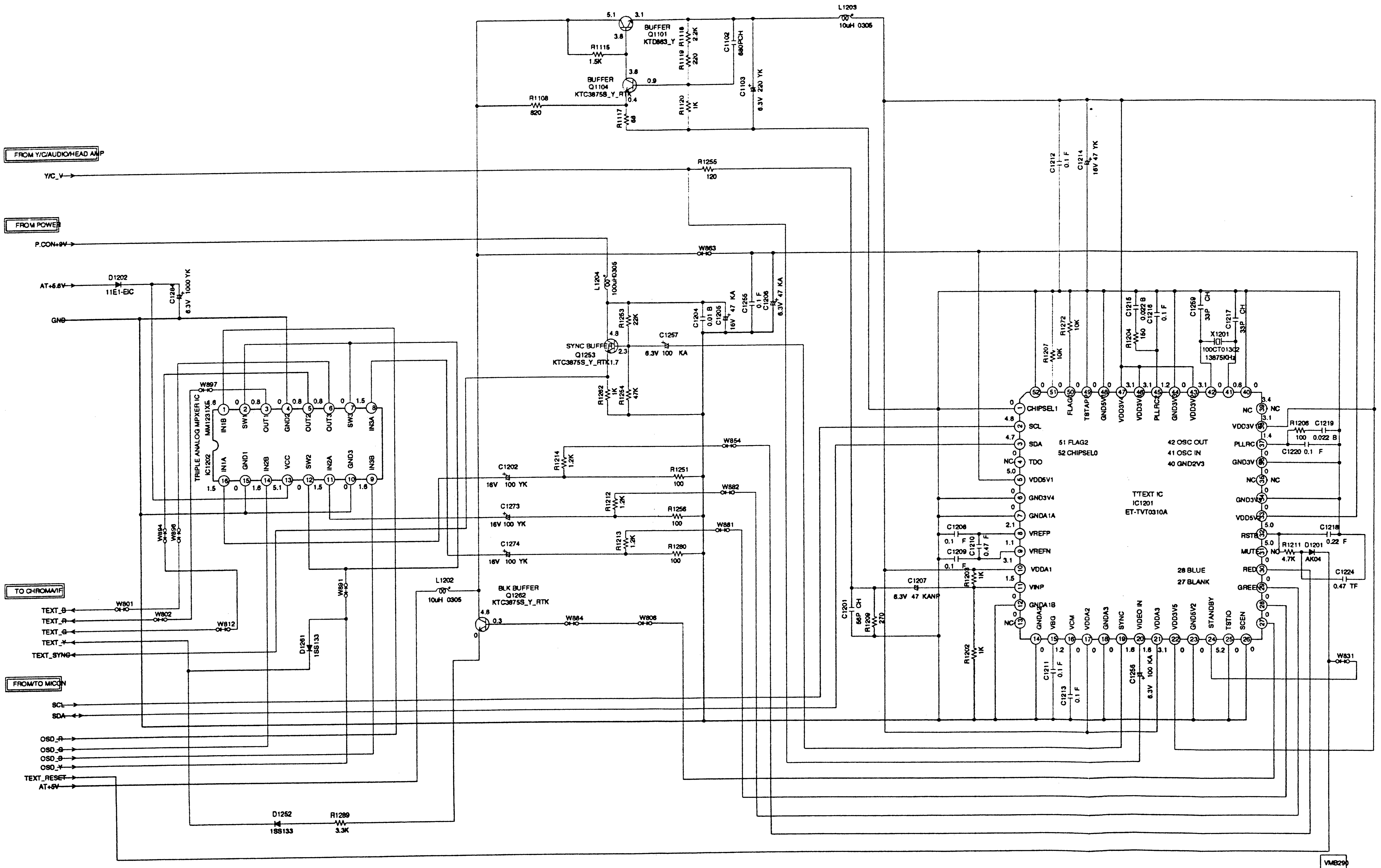
MECHANICAL EXPLODED VIEW


202
116
202
202
202
212
J801
L503
102
202
118
212
212
PCB110
(CRT PCB ASS'Y)
119
V801
212
PCB340
(POWER SW PCB ASS'Y)
119
205
SW501
114
211
117
101B
101G
101F
206
101E
101D
101C
206
101H
SP352
101A
101

T'TEXT/RGB SW SCHEMATIC DIAGRAM

(SYSCON PCB)

(COMBI 3602 SI)


FROM Y/C/AUDIO/HEAD AMP
Y/C_V
FROM POWER
P.CON+9V
AT+5.6V
D1202
11E1-EIC
C1284
6.3V 1000 YK
GND
TO CHROMA/IF
TEXT_B
TEXT_R
TEXT_G
TEXT_Y
TEXT_SYNC
FROM/TO MICON
SCL
SDA
OSD_R
OSD_G
OSD_B
OSD_Y
TEXT_RESET
AT+5V
W801
W802
W812
W894
W896
W897
W891
TRIPLE ANALOG MPXER IC
IC1202
MM1231XS
IN1B
SW1
OUT1
GND2
OUT2
OUT3
SW3
IN3A
IN1A
GND1
IN2B
VCC
SW2
IN2A
GND3
IN3B
D1261
1SS133
D1252
1SS133
R1289
3.3K
BUFFER
Q1101
KTD863_Y
BUFFER
Q1104
KTC3875S_Y_RTK
R1115
1.5K
R1108
820
R1117
68
R1118
2.2K
R1119
220
R1120
1K
C1102
680PCH
C1103
6.3V 220 YK
L1203
10uH 0305
R1255
120
W863
L1204
100uH0305
SYNC BUFFER
Q1253
KTC3875S_Y_RTK
R1253
22K
C1257
6.3V 100 KA
C1204
0.01 B
C1205
16V 47 KA
C1256
0.1 F
C1206
6.3V 47 KA
R1262
1K
R1254
47K
R1214
1.2K
C1202
16V 100 YK
R1251
100
W854
W882
R1212
1.2K
C1273
16V 100 YK
R1256
100
W881
R1213
1.2K
C1274
16V 100 YK
R1260
100
L1202
10uH 0305
BLK BUFFER
Q1262
KTC3875S_Y_RTK
W884
W806
C1212
0.1 F
C1214
16V 47 YK
R1207
10K
R1272
10K
C1215
0.022 B
R1204
180
C1216
0.1 F
C1259
33P CH
C1217
33P CH
X1201
100CT0130Z
13875KHz
T'TEXT IC
IC1201
ET-TVT0310A
CHIPSEL1
SCL
SDA
TDO
VDD5V1
GND3V4
GNDA1A
VREFP
VREFN
VDDA1
VINP
GNDA1B
NC
GNDA2
VBG
VCM
VDDA2
GNDA3
SYNC
VIDEO IN
VDDA3
GND5V5
GND5V2
STANDBY
TSTIO
SCEN
FLAG1
TSTAP
GND5V
VDD3V
PLLRC
GND3V
51 FLAG2
52 CHIPSEL0
42 OSC OUT
41 OSC IN
40 GND2V3
28 BLUE
27 BLANK
RSTB
MUTE
RED
GREEN
R1206
100
C1219
0.022 B
C1220 0.1 F
C1218
0.22 F
R1211
4.7K
D1201
AK04
C1224
0.47 TF
C1208
0.1 F
C1210
0.47 F
C1209
0.1 F
C1207
6.3V 47 KANP
R1203
1K
C1201
56P CH
R1209
270
R1202
1K
C1211
0.1 F
C1213
0.1 F
C1265
6.3V 100 KA
W831
VMB290
PCB010

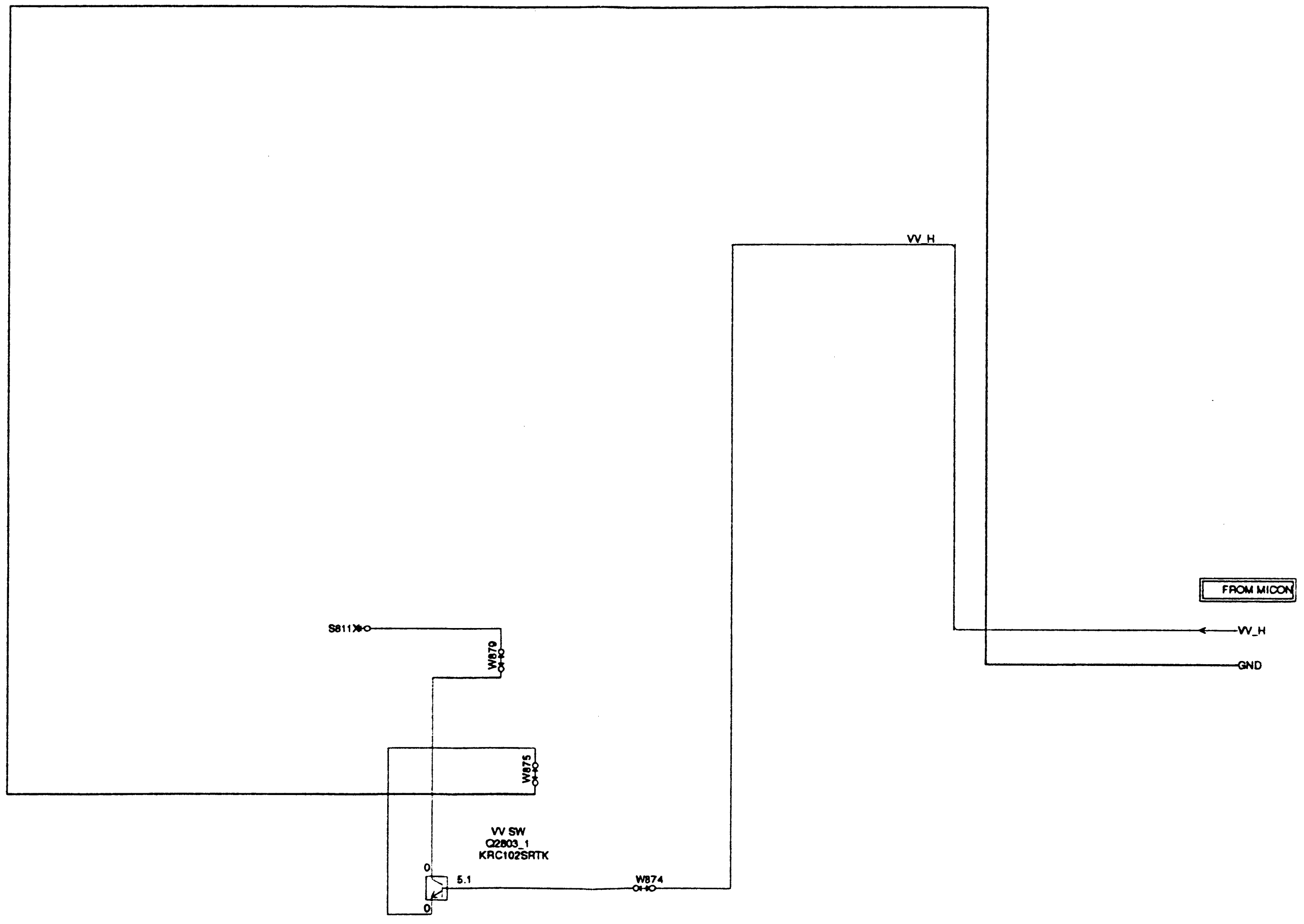
NOTE:THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE

NOTE:THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

SECAM CHROMA SCHEMATIC DIAGRAM

(SYSCON PCB)

(COMBI 3602 SI)

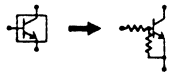

VV_H
FROM MICON
VV_H
GND
S811
W879
W875
VV SW
Q2803_1
KRC102SRTK
0
5.1
0
W874

PCB010
VMB290

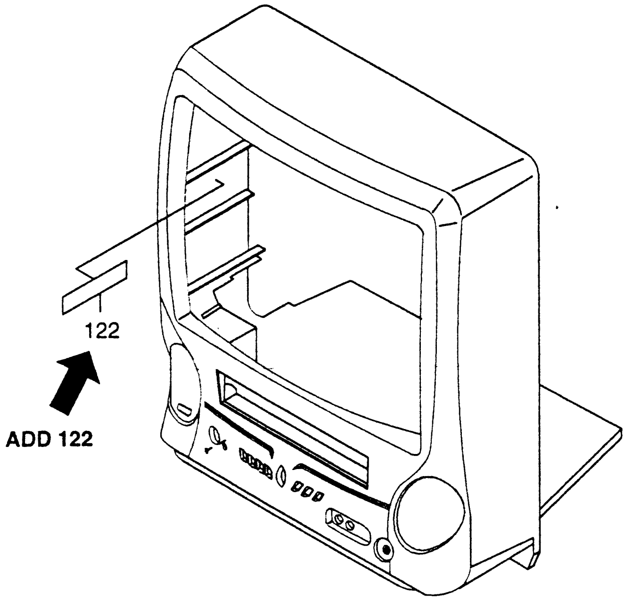
NOTE:THE DC VOLTAGE EACH PART WAS
MEASURED WITH THE DIGITAL TESTER
DURING PLAYBACK.

NOTETHIS SCHEMATIC DIAGRAM S THE LATEST AT THE TIME
OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE

CAUTION: DIGITAL TRANSISTOR



MECHANICAL EXPLODED VIEW
(COMBI 3602 SI)



CHASSIS EXPLODED VIEW (TOP VIEW)
(COMBI 3602 SI)